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Plaster model of the monument it is proposed should be erected by the French Government to the memory of the aviators who have given their lives as pioneers in the conquest of the air.

THE AERONAUT'S LIBRARY.

To know something of books before they are bought is always a wise proceeding, if only from the economic point of view; and no doubt many people are deterred from stocking at least one whole shelf with aeronautical literature because they have not the leisure to find out for themselves those very points they want to know about possible purchases. There exists at the present time a very presentable collection of works relating to various aspects of aeronautics that are not only essential to the student of the subject, but are thoroughly well worthy of possession by the man who is admittedly more platonically interested. Moreover, it is neither necessary nor desirable to search second-hand book shops for out of print volumes by old writers, for, except to the bibliophile, such treatises have already become of little importance.

First are such general works as "The Conquest of the Air," by Alphonse Berget, "Vehicles of the Air," by Victor Loughheed, "Airships Past and Present," by A. Hildebrandt, "Airships in Peace and War," by R. P. Hearne, "Aerial Navigation of To-day," by Charles C. Turner, "Aerial Navigation," by Frederick Walker, C.E., and "The Art of Aviation," by R. W. A. Brewer. All, naturally, have some points of interest, but for our own part we confess to a preference for Loughheed's work, which is well written, even though it suffers somewhat from rather careless arrangement and from a total absence of any index. It is, however, easy to forgive such faults in a first attempt, hoping for better things next time. Although perhaps somewhat out of date, Hildebrandt's "Airships" is still perhaps the most interesting work on this particular branch of the subject, while another book that has a distinct fascination is "My Airships," by Santos Dumont.

Nobody could do better than make their first step the reading of the works of early pioneers—the admirable little Aeronautical Classics published by the oldest Aeronautical Society in the world. These give succinct accounts of the aspirations and experiments of the great men who are proving to have been instrumental in helping towards the conquest of the air, and each book has the fascination of a human document. Incidentally, too, the value of these reproductions is enhanced by exceptionally well-written introductions. Another good biographical work is the "Epitome of the Aeronautical Annual," containing a reprint of the principal articles appearing in a publication that was originally produced by James Means in 1895. It covers some of the ground dealt with by the Aeronautical Classics but would be worth having if only because of the account it contains of Lilienthal's famous gliding experiments, which is the best record of this work in English.

On the technical side, it is necessary to classify books according to the precise aspect of the science of which they treat. If one would study bird flight, for example, Marey's famous tome is a classic that cannot possibly be ignored, although it is yet without an English translation. Almost all books on Aeronautics, however, have, of course, something to say on this subject; Marey, however, was the greatest of all scientific investigators in this field, and even to know something of his method of procedure is an education in itself. Mouillard's "L'Empire de l'Air" must also be included in this category.

In the science of pure aerodynamics, Lanchester's first volume on Aerial Flight deserves to be regarded as a standard treatise and although dealing with a subject that many find abstruse, we have always contended that

Lanchester exhibits therein powers of lucidity not always vouchsafed to minds of equal ability. Nor should anyone be without Langley's "Experiments in Aerodynamics," the first of all treatises on this subject and the record of the most famous experiments ever conducted.

Some smaller works that may be of interest to the student are those by Herbert Chatley on the "Problem of Flight and the Force of the Wind." The title of this latter book is not altogether happy as it is preferable to reserve the term wind for the natural phenomenon instead of applying it broadcast to artificial currents. The study of winds and of meteorology on an even broader scale must necessarily form a part of the complete education of the student of aeronautics; but for the moment this has not been the most pressing side of the science, although the rapid encroachment of mere flight upon the realm of aerial navigation renders this matter daily more urgent. So far Langley's "Internal Work of the Wind" is really the most important study of this branch of flight, and it is essential also that it should be studied in connection with bird flight, especially that part of it relating to soaring. "The Mechanics of the Earth's Atmosphere," published by the Smithsonian Institute, is also an important book. Two works that it is perhaps all the more necessary to mention because they are not ordinarily included as books are those giving the researches of T. E. Stanton on "Air Resistance and Wind Pressure"; they are among the reports of the National Physical Laboratory, but have been issued as separate publications. They should certainly be acquired by all those who do not already possess them, for Dr. Stanton's data is to-day the basis of reference in this particular field of investigation.

There still remains a section of students to whom none of the books mentioned are quite suited, for none of them deal specifically with model making, which is not only an interesting but a very important pastime pursued by a great number of the rising generation. On this subject we have seen no book to equal V. E. Johnson's "Theory and Practice of Model Aeroplaning," which is written in just that instructive style that is so well suited to the needs of the amateur. For a book that is an attempt to summarise the subject of aeronautics at large, in a handy form for reference, we would refer our readers to our own "Flight Manual" and also to Moedebeck's "Pocket Book of Aeronautics" which of itself forms a remarkably good text-book of that branch of science defined as Aerostatics.

Among a variety of miscellaneous works that may be of particular interest to students following a definite line of research, we might mention the small book in which Sir Hiram Maxim gives an account of his experiments and the companion volume to one already mentioned in which Lanchester also deals with a vast amount of experimental research mainly conducted with models. A book that may not be altogether easy to obtain is one containing the proceedings of the International Conference on Aerial Navigation held in Chicago in 1893. The annual report of the Smithsonian Institute also generally contains something of value; while one of the most remarkable books ever issued is Paul Brocket's "Bibliography of Aeronautics"—a stupendous undertaking of nearly a thousand pages full of references to aeronautical literature. Another book in the nature of a catalogue, but illustrated, is F. T. Jane's "Airships," containing a list of the aeroplanes and dirigibles at present in existence.

FLIGHT PIONEERS.



LIEUT. H. E. WATKINS.

354 AERO CLUB DE FRANCE PILOT AVIATORS.

AN extraordinary commentary upon the gigantic strides made by aviation during the past two years is afforded by the following table of aviators to whom the pilot-aviator's certificate of the Aero Club of France has been granted. We have compiled this table from statistics published by our French contemporary, *L'Aerophile*, and it gives particulars of the 354 pilots who have graduated in France. The regulations for the issue of these certificates were drawn up on December 3rd, 1908, on the suggestion of M. Georges Besancon, Secretary of the Aero Club of France, and the first batch of eight were issued on January 7th, 1909, the recipients being MM. Blériot, Delagrè, Robert Esnault-Pelterie, Henry Farman, Orville Wright, Wilbur Wright, Capt. Ferber and Santos Dumont. By the end of 1909 the number of certificates issued was only 18, but during the following year 327 were issued, and during the first four days of this year another 9 were issued, making the total number 354. Of that number, the majority are naturally claimed by France, the actual figure being 272. Russia, curiously enough, comes next with 27, and Great Britain third with 19. Then comes Holland with 7, U.S.A. and Germany with 4 each, Italy and Peru with 3 each, Poland and Switzerland with 2 each, and Brazil, Belgium, Sweden, Alsace, Luxemburg, Roumania, Turkey, Chile, Uruguay, Australia and Japan, with 1 each.

Biplanes have 188 certificates to their credit, Henry Farman coming first with 81, Sommer second with 30, then Voisin with 26, Wright 17, Maurice Farman 9, Savary 6, Goupy 5, Breguet 5, Curtiss 2, Sanchez-Besa 2, Bayard-Clement 1, Caudron 1, Obre 1, Poulain Orange 1, Zodiac 1.

Monoplanes have been the means of securing 166 certificates, Blériots taking the leading position with 93, Antoinette second with 37, then Harriot with 25, Koehlin 15, Demoiselle 4, R.E.P. 3, Teller 3, Niepport 2, Saulnier 1, Train 1, Barillon 1, J.A.P. 1. Four ladies figure in this list, Madame de la Roche, Madame Marthe Niel, Mdlle. Marie Marvingt and Mdlle. Jane Herveu, that being the order in which the certificates were granted.

The youngest of the aviators is Marcel Harriot, who will be 17 on June 8th next, while the "father" of French aviators is General Bonnier, who was 53 last December.

Thirteen of the aviators mentioned in the list—those marked with a (+)—have met their death in connection with aviation.

Name.	Country	Date of Birth.	Where Born.	Machine	Qualified.	Age
Acquaviva (Paul-Vic.)	Fr.	26 Jan., 83	Bône (Alg.)	Bl.	2 My., 10	68
Aiguillon (Roger d')	"	25 Jan., 83	Constantine	Gpy.	7 Dec., 10	308
Algrin (René)	"	10 Mar., 78	Paris	Wgt.	4 Oct., 10	32
André (Claude)	"	13 Fe., 77	Saint-Sernin	H. Far.	29 Aug., 10	192
Archer (Ernest)	Eng.	2 Mar., 74	Wells (Eng.)	Bl.	9 Aug., 10	214
Aubrun (Eugène)	Fr.	25 Aug., 81	Brumoy	Bl.	6 Jan., 10	101
Audemars (Edmond)	Sw.	3 Dec., 86	Geneva	Dem.	10 Jan., 10	200
Bachot (Anastase)	Fr.	8 Ju., 62	Villepelles	"	19 Oct., 10	271
Baeder (Ferdinand de)	"	19 My., 76	Berne	H. Far.	21 Ju., 10	107
Bague (Edouard)	"	21 My., 79	Paris	H. Far.	23 Ju., 10	327
Barillon (Louis)	"	28 Mar., 76	Lyons	Han.	4 Oct., 10	236
Balaye (Auguste)	"	17 Jan., 67	Cahors	H. Far.	8 No., 10	275
Balensi (Albert)	"	26 Oct., 77	Algiers	"	9 Aug., 10	173
Balsan (Jacques)	"	16 Se., 67	Châteauroux	Bl.	6 Jan., 10	22
Baratou (Marcel)	"	3 Ju., 84	Paris	Wgt.	10 Ap., 10	49
Barrotte (Ernest)	"	19 No., 71	Paris	Bl.	19 No., 10	48
Barillon (Pierre)	"	21 My., 92	Bordeaux	Bar.	7 Dec., 10	327
Barra (François)	"	9 Fe., 66	Paris	M. Far.	9 Aug., 10	171
Barrier (René)	"	17 Jan., 84	Chateaudun	Bl.	2 My., 10	64
Basset (Paul)	"	10 Se., 82	Macéuil-sur-Belle	Far.	19 Ju., 10	145
Bathiat (Geo-Henri)	"	11 Mar., 70	Douai	Han.	4 Oct., 10	237
Bathiat (Leon)	"	4 Au., 77	"	Breg.	29 Aug., 10	193
Baugnot (Jean-Eugène)	"	27 Fe., 78	Paris	Som.	29 Aug., 10	193
Beard (Pierre)	"	2 Ap., 83	Rocheport	Bl.	8 No., 10	276
Beard (Edouard)	"	1 Ap., 85	Meurad (Alg.)	H. Far.	19 Ju., 10	150
Becue (Jean)	"	11 Mar., 77	Merville	Tel.	19 Oct., 10	263
Bellenger (Georges)	"	19 Se., 78	Evreux	Bl.	5 Ap., 10	45
Bellier (Albert)	"	5 Au., 76	Jaune	Ant.	23 No., 10	297
Bellot (André)	"	6 Mar., 83	Paris	Bl.	7 Dec., 10	327
Biard (Georges)	"	9 Ju., 69	Gien	H. Far.	19 Oct., 10	261
Bibesco (Georges)	Rou.	23 Ap., 80	Bucharest	Bl.	6 Jan., 10	101
Rieloville (Jean)	Peru	30 Ju., 89	Lima	H. Far.	10 Ju., 10	87
Bill (Henri)	Fr.	27 Dec., 86	Vienna	Bl.	29 Aug., 10	205
Binda (Louis)	"	28 Fe., 76	Maraiselles	M. Far.	4 Oct., 10	213
Bonnier (F. Xavier)	"	10 Ju., 74	Paris	H. Far.	4 Oct., 10	213
Blanchard (Fernand)	"	5 My., 85	Nantes	Bl.	19 Se., 10	32
Blériot (Louis)	"	1 Ju., 76	Cambrai	Bl.	7 Jan., 09	1
Blondeau (Gus.)	"	8 Mar., 71	Tergnier	H. Far.	10 Ju., 10	101
Bobba (André)	"	9 Fe., 93	Paris	Gpy.	7 Dec., 10	309
Boise de Courconay (Count)	"	7 No., 74	Tours	Bl.	8 No., 10	283
Boivin (Albert)	"	22 Ap., 73	Troyes	Han.	4 Oct., 10	248
Bonnet (F. Xavier)	"	3 Dec., 57	La Réunion	H. Far.	19 Ju., 10	144
Bournique (Pierre)	Als.	4 Mar., 88	Alschbrun	R.E.P.	19 Ju., 10	247
Bouquet (Paul)	Fr.	30 Ju., 78	St. Cloud	H. Far.	23 No., 10	195
Bouvier (André)	"	22 Jan., 88	Paris	Som.	21 Ju., 10	120
Boyer (Louis)	"	5 Ap., 85	Étang-sur-Arroux	Ant.	23 No., 10	303
Bregi (Henri)	"	4 Dec., 88	Sedan	Vois.	21 Dec., 09	36
Breguet (Louis)	"	2 Jan., 80	Paris	Breg.	19 Ap., 10	32
Bresson (Geo.)	"	24 Ju., 80	Bordeaux	Ant.	8 No., 10	280
Briançon (Lucille)	"	4 Mar., 75	Paris	Breg.	8 No., 10	277
Bruneau de Laborie (Emile)	"	1 Ap., 71	Dordogne	H. Far.	2 My., 10	67

Bunau-Varilla (Étienne)	Fr.	10 My., 90	Paris	Vois.	4 No., 10	16
Burgat (Médéric)	"	11 No., 84	Chevillon	Ant.	5 Ap., 10	44
Burke (C. J.)	Eng.	9 Mar., 82	Armagh	H. Far.	4 Oct., 10	260
Bussan (Guillaume)	Fr.	14 Ap., 85	Chedigny	Bl.	21 Ju., 10	121
Byasson (L.)	"	20 My., 72	Paris	M. Far.	9 Aug., 10	175
Caillé (Albert)	"	10 Au., 80	Argenteuil	H. Far.	29 Au., 10	200
Cameran (Felix)	"	2 Oct., 84	Paris	M. Far.	8 Mar., 10	32
Cames (M. Garcia)	Uruguay.	17 Ju., 93	San José	Bl.	8 Oct., 10	287
Campo-Scipio (Michel de)	Rus.	26 Se., 87	Kieff (Rus.)	Han.	29 Aug., 10	213
Caudron (René)	"	1 Ju., 84	La Neuveville	Cand.	6 Ju., 10	180
Casano (J. Jacques de)	"	29 Se., 82	La Juvencière	Som.	9 Au., 10	156
Cederstrom (Carl de)	Sw.	5 Mar., 67	Stockholm	Bl.	2 My., 10	74
Chailley (Henri)	Fr.	13 Fe., 81	Paris	Vois.	9 Au., 10	193
Champel (Flor.)	"	10 No., 81	Brussels	Vois.	10 Ju., 10	104
Charpentier (Louis)	"	16 Mar., 91	Madreuil	Bl.	8 No., 10	286
Chassagne (Jean)	"	26 Se., 81	La Croiselle	Han.	9 Au., 10	160
Chatain (M. Louis)	"	2 Ap., 81	Pontcharra	Som.	19 Oct., 10	267
Chatain (L. M. Louis)	"	11 Mar., 88	Paris	Ant.	23 No., 10	260
Château (Edward)	"	12 Ap., 80	La Châtre	Tel.	1 Ju., 10	135
Chavez (Geo.)	Peru	13 Ju., 87	Paris	H. Far.	15 Fe., 10	132
Chemet (Geo.)	Fr.	12 Ju., 91	—	Vois.	9 Au., 10	159
Cherret (Leon)	"	11 Dec., 74	Marseilles	H. Far.	2 My., 10	102
Cheutin (Étienne)	"	23 My., 80	Gueugny	M. Far.	21 Ju., 10	323
Chevalier (Louis)	"	12 Ju., 83	Nantes	Bl.	23 Dec., 10	303
Chevreau (René)	"	15 My., 79	St. Brisson	Wgt.	1 Ju., 10	132
Chioni (Basile)	Kus.	28 Fe., 80	Odessa	Ant.	4 Oct., 10	289
Clavenad (Pierre)	Fr.	22 Ap., 78	Cherbourg	Ant.	23 Nv., 20	294
Clement (Maurice)	"	29 Jan., 87	Paris	H. Cle.	21 Ju., 10	108
Clout (Geo.)	"	10 Sp., 67	Badens	Ant.	10 Ju., 10	97
Colliex (Maurice)	"	1 Ju., 61	Lyons	Vois.	9 Au., 10	160
Colson (Jean)	"	26 Jan., 90	Nantes	H. Far.	8 Nv., 10	279
Colombi (Henri)	"	10 Jan., 86	Lyons	H. Far.	7 Dec., 10	310
Contat (Paul)	"	8 Fe., 80	Lodève	Bl.	7 Dec., 10	322
Contard (Paul)	"	14 Fe., 71	Southampton	Bl.	4 Jan., 11	381
Cordonnier (Robert)	"	18 Jan., 89	Lille	Han.	19 Sp., 10	291
Crochon (André)	"	5 Ap., 82	Paris	H. Far.	5 Ap., 10	43
Cronier (André)	"	23 No., 80	Paris	Ant.	1 Ju., 11	352
Cugnet (Gaston)	"	20 Jan., 79	Ile Maurice	H. Far.	19 Ju., 10	449
Cure (Gaston Maurice)	"	29 Ju., 83	Paris	Ant.	4 Oct., 10	242
Curtiss (Glenn)	U.S.A.	12 No., 82	Neully	Curtiss	7 Oct., 09	2
Dailiens (Jean)	"	8 Mar., 83	Limoges	Som.	21 Ju., 10	119
Delage (Gustav)	"	13 Mar., 73	Orleans	Vois.	19 Se., 10	219
Delagrè (Léon)	"	3 Mar., 89	Paris	Bl.	5 Ap., 10	42
Delatant (Fernand)	"	1 Ma., 81	Belleville	H. Far.	4 Oct., 10	254
Derny (Leon)	"	15 Mar., 82	Paris	"	9 Au., 10	158
Devaux (Robert)	"	6 Oct., 82	Constantinople	"	4 Oct., 10	243
Deve	"	"	"	"	"	"
Dickson (Bertram)	Eng.	21 Dec., 73	Edinburgh	"	19 Ap., 10	71
Dieder (A.)	Fr.	24 Ap., 89	Bruxelles	H. Far.	17 My., 10	72
Dorogusky (S.)	Rus.	6 Oct., 79	Russia	Ant.	10 Ju., 10	195
Dubonnet (Emile)	"	18 Oct., 83	Paris	Tel.	5 Au., 10	47
Duflot (Eugène)	"	9 Mar., 85	Fontaine	Bl.	8 No., 10	274
Dufour (Edmond)	"	4 Mar., 79	Alais	"	10 Ju., 10	103
Dufour (Jean)	"	23 Au., 89	Lille	Vois.	10 Ju., 10	106
Duport (Louis)	"	10 Au., 78	Amiens	H. Far.	29 Au., 10	186
Duperron (Capt.)	"	16 Ju., 71	Haguenau	M. Far.	29 Au., 10	195
Duxal (Emile)	"	24 Ap., 86	Paris	Saul	21 Ju., 10	114
Eduoff (Michel)	U.S.A.	1 No., 81	Smolensk	H. Far.	15 Fe., 10	31
Eristov (Prince W.)	"	14 Ju., 68	Iffis	Han.	8 No., 10	228
Esnault-Pelterie (K.)	Fr.	8 No., 81	Paris	R.E.P.	7 Jan., 09	4
Esterre (Chas. Robert)	Eng.	14 Ju., 77	London	Ant.	10 Oct., 10	259
Etève (Albert)	Fr.	24 My., 80	Paris	Wgt.	10 Ju., 10	89
Evans (Henry)	Eng.	25 My., 74	"	"	7 Ju., 09	5
Farnan (Maurice)	"	21 Mar., 77	Paris	M. Far.	10 Ju., 10	114
Felix (Julien)	"	28 Mar., 69	Limoges	Bl.	19 Oct., 10	270
Féquant (Albert)	"	2 Jan., 86	Paris	H. Far.	2 My., 10	63
Féquant (Philippe)	"	9 Ju., 63	Montmorancy	H. Far.	23 Dec., 10	340
+Ferber (Ferdinand)	"	8 Fe., 62	Lyons	Vois.	7 Jan., 09	5
Florence (Jean)	"	16 Ju., 63	Paris	H. Far.	29 Au., 10	201
Frey (Alfred)	"	4 Ju., 81	Heidenheim	H. Far.	5 Ap., 10	148
Froussart (Ernest)	Ger.	28 Dec., 24	Charleville	Som.	4 Jan., 11	350
Gaget (Joseph)	Fr.	2 Fe., 84	Lyons	Bl.	23 Dec., 10	335
Gallie (Fernand)	"	3 Ju., 88	Paris	"	23 Dec., 10	345
Garnier (Léonce)	"	28 Mar., 81	St. Denis	"	7 Dec., 10	305
Gassier (René)	"	6 Oct., 88	St. Denis	Wgt.	7 Dec., 10	305
Gaubert (Edmond)	"	27 Mar., 74	Guimperlé	Ant.	19 Ju., 10	147
Gaubert (Louis)	"	22 Mar., 76	Alger	Bl.	7 Dec., 10	313
Gaudart (Chas.)	"	6 Ju., 79	Paris	Wgt.	2 My., 10	59
Gaulard (Louis)	"	17 No., 85	Pondichéry	Vois.	4 Oct., 10	228
Gaye (Geo.)	"	31 My., 84	Paris	Ant.	23 No., 10	302
Gibbe (Lancelot)	"	7 Ap., 79	Reims	Vois.	4 Oct., 10	251
Gibert (Louis)	Eng.	16 Ju., 83	Bath	H. Far.	10 Ju., 10	82
Gilbert (Eugène)	"	19 Ju., 85	Albi	Bl.	10 Ju., 10	82
Girard (Justin)	Fr.	19 Ju., 89	Riom	"	4 Oct., 10	240
Glorieux (Leon)	"	29 Ju., 81	Angers	Som.	29 Au., 10	197
Gobron (Jean)	"	4 Fe., 78	Pambroux	Som.	26 Au., 10	188
Goffin (J. Marcel)	"	5 Ju., 83	Angers	Vois.	10 Ju., 10	102
Gouin (Emile)	"	23 My., 83	Paris	Ant.	7 Oct., 09	7
Gounouilhout (André)	"	14 Au., 85	Bagnole	Bl.	8 No., 10	284
Gour ay (Henri)	"	8 Se., 75	Paris	Bl.	4 Jan., 11	348
Graham-Gilmour (D.)	"	24 Oct., 88	Bordeaux	Ant.	23 Dec., 10	329
Grahame-White (C.)	Eng.	4 Mar., 89	Boulogne	Han.	29 Au., 10	186
Grenel (Marcel)	"	7 Mar., 85	Dartford	Bl.	19 Ap., 10	75
Grezaud (Pierre)	"	21 Au., 79	Southampton	Bl.	4 Jan., 10	30
Gronier (Jules)	Fr.	21 Ju., 80	Paris	Bl.	21 Ju., 10	117
Guée (Albert)	"	21 Fe., 87	Garrevod	Som.	19 Oct., 10	205
Gué (Albert)	"	19 Au., 83	Dayet - la Presle	H. Far.	19 Ju., 10	138
Gué (Albert)	"	16 My., 86	Savigny	Bl.	19 Se., 10	216
Gué (Albert)	"	2 Fe., 83	Pontane	Bl.	4 Oct., 10	239
Hammond (Joe)	Aus.	19 Ju., 86	Whirling	San-B.	4 Oct., 10	260
Harriot (Marcel)	Fr.	8 Ju., 84	Champlite	Han.	10 Ju., 10	253
Harding (Howard)	Eng.	29 Ju., 81	London	J.A.P.	9 Au., 10	213
Hable (André)	Fr.	1 Dec., 86	Bordeaux	Sav.	4 Oct., 10	250
Hautefeuille (Lieut.)	"	1 Jan., 78	Toulon	H. Far.	4 Oct., 10	247

Herbster (Maur.)	Fr.	2 Jan. 70	Paris	H. Far.	8 Ma., 10	341	Pascal (Ferdinand)	Fr.	19 No., 76	Beziers	BL	23 No., 10	301
Herveu (Jane)	"	10 De., 85	Paris	BL	7 De., 10	18	Paul (Edmond)	Eng.	23 Fe., 79	Paris	"	19 Oc., 10	272
Hesne (Paul)	"	20 Ju., 86	Rheims	Breg.	21 Ju., 10	113	Paul (Ernest)	"	10 Ju., 71	"	Vois.	10 Ju., 10	91
Hugom (Ed.)	"	21 Au., 79	Bouguival	H. Far.	9 Au., 10	165	Paulhan (Louis)	"	10 Ju., 84	Pezenas	"	17 Au., 09	10
Jambely (Paul)	"	8 My., 87	Paris	Koe.	30 Au., 10	268	Pehavovsky (Bavile)	Rus.	1 Ja., 89	Odesa	BL	4 Ja., 11	346
Joliot (Andre)	"	12 Ja., 84	Gangy	Koe.	23 De., 10	341	Pelloux (Maurice)	Fr.	4 Oc., 86	Toulon	Sav.	10 Ju., 18	181
Jolly (Lieut.)	"	7 Ma., 77	Nancy	Ant.	19 Oc., 10	263	Perrin (Henri)	"	1 Fe., 88	Bracquemont	Vois.	10 Ju., 10	86
Jost (René)	"	1 De., 79	Rheims	H. Far.	2 My., 10	61	Perrin (Albert)	"	23 Se., 79	St. Ambroix	H. Far.	9 Au., 10	188
Jullerot (Henri)	"	44 Ap., 77	Pontarlier	H. Far.	4 Oc., 10	253	Perreyou (Edmond)	"	14 Ju., 80	Paris	BL	7 De., 10	317
Junod (Aug.)	"	21 Se., 77	Coutais	BL	29 Au., 10	210	Petrovski (Alex. de)	Rus.	21 De., 85	St. Peters.	Som.	21 Ju., 10	124
Kabouroff (Viss)	Rus.	13 Oc., 93	Paris	H. Far.	20 Au., 10	198	Picard (Pierre)	Fr.	26 No., 79	Bordeaux	Sav.	9 Au., 10	164
Kauffmann (Paul)	Fr.	21 Se., 77	Lyons	Som.	19 Oc., 10	251	Piccollo (G. illo)	It.	28 Oc., 86	Capriata	BL	23 No., 10	299
Kimmerling (Albert)	Fr.	7 My., 81	Mulhouse	Koe.	29 Au., 10	123	Piotrowski (Pierre)	Pol.	8 Ja., 81	Cracow	"	29 Au., 10	195
Kochlin (Jean)	Rus.	22 My., 87	Corkow	Ant.	4 Oc., 10	245	Planchut (Edmond)	Fr.	19 Ma., 65	Angoulême	"	7 De., 10	319
Koolhoven (Friby)	Hol.	11 Ja., 86	Blomenc.	Han.	8 No., 10	290	Polloil (Edmond)	"	28 Ja., 88	Paris	Sav.	29 Au., 10	182
Kostine (Nick)	Rus.	6 De., 80	Tchisbopol	H. Far.	19 Se., 10	223	Popoff (Nick)	Kus.	11 Ju., 78	Moscow	Wgt.	19 Ap., 10	349
Kozminski (Alex. de)	Fr.	14 No., 81	Kharlof	BL	10 Se., 10	227	Poulerigen (François)	Fr.	7 De., 78	St. Nazare	Ant.	4 Ja., 11	169
Kuhling (Paul)	"	13 De., 70	Dusseldorf	BL	19 Ju., 10	136	Prier (Pierre)	"	26 De., 86	Koulen	Vois.	21 De., 10	231
Kuller (G. F.)	Hol.	26 Ju., 81	Loenen	Ant.	3 Ap., 10	141	Sametcaay (Pierre)	Kus.	30 Ap., 74	Bordeaux	"	21 De., 10	231
Labouchère (Jacques)	"	4 Ma., 84	Amsterdam	Zod.	23 De., 10	344	Savoyard (Georges de)	Fr.	4 Ju., 84	Galesin	H. Far.	29 Au., 10	207
Labouchère (René)	Fr.	13 Fe., 90	Paris	Ant.	10 Ju., 10	86	Savoyard (Georges de)	Fr.	12 Au., 81	St. Germain	H. Far.	19 Ju., 10	143
Labouret (René)	"	8 Ma., 80	Emigny	Som.	10 Se., 10	222	Savoyard (Georges de)	"	27 Ja., 77	Paris	M. Far.	19 Ju., 10	139
Ladougue (Emile)	"	6 My., 81	Agen	Gpy.	17 My., 10	81	Savoyard (Georges de)	Hol.	14 My., 87	Utrecht	Cur.	8 Ma., 10	24
Lafarque (Henri)	"	9 Ju., 75	Carcère	Han.	8 No., 10	271	Savoyard (Georges de)	Fr.	22 Se., 79	Paris	Vois.	21 Ju., 10	160
Laffont (Alex.)	"	13 Ju., 84	Pleurance	Ant.	21 Ju., 10	113	Savoyard (Georges de)	"	18 Ju., 84	Nice	Ant.	29 Au., 10	184
Lafon (Chas.)	"	24 Au., 82	Toulon	H. Far.	29 Au., 10	194	Savoyard (Georges de)	Eng.	27 Au., 77	London	Wgt.	6 Ja., 10	231
Lambert (Chas.)	Rus.	30 De., 65	Mader	Wgt.	7 Oc., 09	8	Savoyard (Georges de)	Fr.	11 Se., 82	Amiens	BL	8 No., 10	288
Langhe (Armand de)	Fr.	11 Ju., 75	Mourm.	Vois.	20 Au., 10	204	Savoyard (Georges de)	"	28 Oc., 76	Marseilles	Vois.	16 No., 09	11
Laroche (Armand de)	"	22 Au., 84	Paris	"	8 Ma., 10	36	Savoyard (Georges de)	Fr.	29 Au., 77	Ouchy	Ant.	1 Ju., 10	127
Latham (Hubert)	"	10 Ja., 83	"	K.E.P.	17 Au., 09	9	Savoyard (Georges de)	Fr.	31 Ja., 82	Pau	Ant.	21 Ju., 10	127
Laurens (Ernest)	"	9 My., 73	Boulogne	Ant.	4 Oc., 10	46	Savoyard (Georges de)	U.S.A.	13 Fe., 79	Santiago	San-B.	20 Au., 10	155
Lebedeff (Wladimir)	Rus.	13 Ap., 69	Petersburg	BL	16 De., 09	27	Savoyard (Georges de)	Fr.	20 Ju., 80	N. York	S.D.	7 Ja., 09	12
Leblanc (Alfred)	Fr.	72	"	"	8 Ma., 10	38	Savoyard (Georges de)	Br.	9 Au., 80	La Corogne	Wgt.	9 Au., 10	153
Leblanc (Hubert)	"	1 Fe., 55	Auxonne	"	7 De., 10	320	Savoyard (Georges de)	"	13 Ju., 82	Nuaille	Sav.	21 Ju., 10	112
Legoux (Geor.)	"	24 De., 82	Puteaux	Som.	19 Ap., 10	131	Savoyard (Georges de)	"	10 No., 89	Lyons	Ant.	7 De., 10	116
Lemarin (Theo.)	"	20 Oc., 83	Dunes	BL	4 Oc., 10	240	Savoyard (Georges de)	Ger.	20 Se., 84	Kongon	H. Far.	29 Au., 10	187
Lesire (Eugene)	"	19 Ja., 71	Ris-Orangis	BL	9 Au., 10	175	Savoyard (Georges de)	Rus.	20 My., 78	Paris	BL	8 No., 10	326
Lesseps (Jacques de)	"	3 Ju., 83	Paris	BL	4 Ja., 10	27	Savoyard (Georges de)	Fr.	24 Ma., 76	St. Denis	Som.	19 Se., 10	218
Lesseps (Paul de)	"	13 Au., 80	"	Som.	1 Ju., 12	144	Savoyard (Georges de)	"	8 Ju., 74	Commercy	H. Far.	9 My., 10	65
Letheux (Gaston)	"	4 Au., 81	Milly	H. Far.	19 Ju., 10	132	Savoyard (Georges de)	"	8 De., 85	Paris	BL	10 Ju., 10	177
Letort (Leon)	"	18 Se., 80	Pire	BL	9 Au., 10	170	Savoyard (Georges de)	Turkey	"	"	BL	23 De., 10	136
Level (René)	"	22 Ju., 77	Paris	Sav.	7 De., 10	311	Savoyard (Georges de)	Eng.	27 My., 84	St. Peters.	Som.	19 Se., 10	231
Lewkowicz (Ladis)	Rus.	12 Ju., 80	Petrokow	BL	23 No., 10	327	Savoyard (Georges de)	Fr.	4 Au., 77	Pierrefort	Som.	15 Ja., 10	29
Lipkowsky (Henri de)	"	23 Se., 87	Fournanka	H. Far.	19 Se., 10	220	Savoyard (Georges de)	Eng.	18 My., 74	"	H. Far.	1 Ju., 10	151
Lombardi (Henri)	"	5 Ma., 87	Menton	"	21 Ju., 10	126	Savoyard (Georges de)	Rus.	13 No., 87	St. Peters.	BL	8 No., 10	092
Loridan (Marcel)	"	4 De., 83	Paris	"	19 Se., 10	204	Savoyard (Georges de)	"	"	"	"	"	"
Loraine (Robert)	Eng.	14 Ju., 76	Liskeard	Fr. Wgt.	9 Au., 10	155	Savoyard (Georges de)	Fr.	24 Ap., 84	Dijon	M. Far.	1 Ju., 10	128
Lucca (Desiré)	Fr.	20 Ma., 83	Toulon	Breg.	4 Oc., 10	254	Savoyard (Georges de)	"	16 Ja., 78	Paris	BL	4 Ja., 11	347
Ludmann (Gaston)	It.	24 My., 78	Rheims	BL	4 Oc., 10	393	Savoyard (Georges de)	Peru	9 Ju., 74	Kouen	"	10 Ju., 84	84
Lusetti (Archimède)	"	21 Ma., 81	Keggio	"	4 Oc., 10	393	Savoyard (Georges de)	"	10 Ju., 84	Kouen	"	28 No., 10	908
Lutge (Fritz)	Hol.	5 Jan., 81	Amsterdam	"	7 De., 10	323	Savoyard (Georges de)	Fr.	19 Oc., 79	Mercaux	H. Far.	17 My., 10	79
+Maasticht (Clement van)	"	7 Au., 85	La Haye	Som.	10 Ju., 10	130	Savoyard (Georges de)	"	6 Ma., 86	Perrigieux	Ant.	27 Ju., 10	116
McArdle (William)	Eng.	24 Ja., 75	Cawnpore	BL	19 Ap., 77	120	Savoyard (Georges de)	"	19 Fe., 81	Perrigieux	Wgt.	16 Se., 09	118
+Madiot (Louis)	Fr.	21 My., 67	Paris	H. Far.	10 Ju., 10	163	Savoyard (Georges de)	Jap.	24 Ju., 81	Tokio	H. Far.	4 No., 10	289
Mabieu (Geo.)	"	15 Se., 82	Constantine	BL	21 Ju., 10	126	Savoyard (Georges de)	Fr.	24 Ju., 82	Loos	BL	19 Ap., 10	56
Mabieu (Michel)	"	1 Ju., 87	Armentieres	BL	9 Au., 10	168	Savoyard (Georges de)	"	22 Oc., 77	St. Etienne	Tr.	29 Au., 10	169
Mailfert (Lieu)	"	21 De., 75	Châtillon	H. Far.	19 Ju., 10	146	Savoyard (Georges de)	"	14 Oc., 76	Paris	BL	23 De., 10	330
Maillos (Joseph)	"	8 Ma., 76	Torrelles	Wgt.	1 Ju., 10	131	Savoyard (Georges de)	"	5 Au., 82	Oran	H. Far.	19 Oc., 10	269
Malherbe (Rene de)	"	27 Ju., 81	Vieilleins	BL	23 De., 10	334	Savoyard (Georges de)	"	2 My., 80	Paris	Som.	31 Ju., 10	100
Malysky (Cmt. de)	Rus.	26 Ma., 75	Beregov	H. Far.	29 Au., 10	209	Savoyard (Georges de)	Belg.	11 Ju., 73	Lidge	H. Far.	23 De., 10	338
Mamet (Julien)	Fr.	24 Ja., 77	Bourges	Vois.	23 De., 10	338	Savoyard (Georges de)	"	30 Se., 66	Monsnigne	H. Far.	29 Au., 10	174
Marchal (Ansimle)	"	23 De., 82	Moutier	H. Far.	4 Oc., 10	238	Savoyard (Georges de)	"	24 Ja., 89	Lille	Han.	8 No., 10	282
Marconnet (Capt.)	"	2 Ju., 69	Montbéliard	BL	17 My., 10	80	Savoyard (Georges de)	"	29 De., 81	St. Denis	BL	7 De., 10	312
Marquieu (René)	"	22 Ju., 70	Sault	BL	17 My., 10	80	Savoyard (Georges de)	"	29 Ju., 78	Bellevue	Ant.	1 Ju., 10	129
Marie (Felix)	"	16 My., 82	Versailles	Han.	9 Au., 10	162	Savoyard (Georges de)	"	27 Ja., 81	Rion	Dem.	19 Ju., 10	140
Martin (Xavier)	"	24 De., 85	Aucourt (Peru)	H. Far.	17 My., 10	78	Savoyard (Georges de)	"	30 Ap., 83	Paris	Gpy.	23 De., 10	242
Martinet (Robert)	"	20 Fe., 75	Aurillac	Ant.	8 No., 10	281	Savoyard (Georges de)	"	24 Ju., 90	Divonne-les-	Han.	1 Ju., 10	133
Marvingt (Boris)	Rus.	2 Fe., 88	Moscow	H. Far.	8 No., 10	281	Savoyard (Georges de)	"	"	Bains	"	"	"
Matyevitch (Matyevitch)	Pol.	2 De., 87	Moscow	H. Far.	8 No., 10	281	Savoyard (Georges de)	"	"	Bains	"	"	"
+Matyevitch (Leon)	Rus.	1 Ju., 77	Kieff	H. Far.	9 Au., 10	125	Savoyard (Georges de)	"	"	Bains	"	"	"
Mauvais (Jean)	"	3 Ja., 79	Villos	Som.	10 Ju., 10	144	Savoyard (Georges de)	"	"	Bains	"	"	"
Melly (Henry)	Eng.	23 Oc., 68	Liverpool	BL	9 Au., 10	122	Savoyard (Georges de)	"	"	Bains	"	"	"
Ménard (Victor)	Fr.	8 Ju., 81	Rochefort	H. Far.	20 Au., 10	210	Savoyard (Georges de)	"	"	Bains	"	"	"
Metro (René)	"	"	"	Vois.	6 Ju., 10	19	Savoyard (Georges de)	"	"	Bains	"	"	"
Meyer (Jules)	"	4 Se., 77	Paris	Ant.	10 Ju., 10	133	Savoyard (Georges de)	"	"	Bains	"	"	"
Mignot (Robert)	"	10 Ja., 82	Havre	Vois.	17 My., 10	76	Savoyard (Georges de)	"	"	Bains	"	"	"
Milgean (Paul)	"	22 Ju., 78	Vcu	H. Far.	23 De., 10	339	Savoyard (Georges de)	"	"	Bains	"	"	"
Molla (Henri)	"	15 Ju., 62	Athens	Som.	9 Au., 10	172	Savoyard (Georges de)	"	"	Bains	"	"	"
Molla (Michel)	"	24 No., 86	"	"	9 Au., 10	166	Savoyard (Georges de)	"	"	Bains	"	"	"
Mollieu (Elie-Abel)	"	25 Ap., 76	Amiens	BL	10 Ap., 10	137	Savoyard (Georges de)	"	"	Bains	"	"	"
Molon (Leon)	"	12 Ja., 81	Arras	"	10 Ja., 10	95	Savoyard (Georges de)	"	"	Bains	"	"	"
Molon (Louis)	"	30 Au., 75	Don-heri	"	4 Oc., 10	134	Savoyard (Georges de)	"	"	Bains	"	"	"
Molon (Lucien)	"	14 Au., 81	Arras	"	10 Oc., 10	135	Savoyard (Georges de)	"	"	Bains	"	"	"
Montigny (Alfred de)	"	1 Ju., 81	Lille	"	2 My., 10	69	Savoyard (Georges de)	"	"	Bains	"	"	"
Moore-Bravand (G.)	Eng.	8 Fe., 84	London	Wgt.	8 Ma., 10	49	Savoyard (Georges de)	"	"	Bains	"	"	"
Moran (Leon)	Fr.	11 Ap., 85	Paris	BL	10 Ap., 10	137	Savoyard (Georges de)	"	"	Bains	"	"	"
Morel (Pierre)	"	8 Fe., 86	Nogent	Som.	10 Oc., 10	69	Savoyard (Georges de)	"	"	Bains	"	"	"
Morelle (Edmond)	"	3 Ju., 80	Paris	H. Far.	8 Ma., 10	38	Savoyard (Georges de)	"	"	Bains	"	"	"
Morin (Roger)	"	2 Ju., 80	Celigny	BL	7 De., 10	106	Savoyard (Georges de)	"	"	Bains	"	"	"
Mortimer-Singer (A.)	Eng.	25 Ju., 63	New York	H. Far.	6 Ju., 10	24	Savoyard (Georges de)	"	"	Bains	"	"	"
Mouthier (Louis)	Fr.	31 De., 84	Bourg	BL	9 Au., 10	157	Savoyard (Georges de)	"	"	Bains	"	"	"
Mumm (Walter de)	Ger.	13 Ja., 87	Frankfort	Ant.	19 Ap., 10	58	Savoyard (Georges de)	"	"	Bains	"	"	"
Nebi (Giuseppe)	It.	26 My., 78	Bologna	"	23 De., 10	345	Savoyard (Georges de)	"	"	Bains	"	"	"
Niel (Albert)	Fr.	8 Se., 83	Mar-elles	Vois.	10 Ju., 10	104	Savoyard (Georges de)	"	"	Bains	"	"	"
Niel (Martha)	"	26 De., 80	Palmpont	Koe.	10 Ju., 10	104	Savoyard (Georges de)	"	"	Bains	"	"	"
Nieuport (Ed.)	"	24 Au., 75	Blidat (Alg.)	Nieu.	21 Ju., 10	122	Savoyard (Georges de)	"	"	Bains	"	"	"
Noël (Andre)	"	13 Oc., 67	Paris	BL	21 Ju., 10	122	Savoyard (Georges de)	"	"	Bains	"	"	"
Noël (Jules)	"	31 Ma., 78	Nancy	Som.	23 De., 10	339	Savoyard (Georges de)	"	"	Bains	"	"	"
Nogues (Maurice)	"	21 Oc., 89	Rennes	Vois.	21 Ju., 10	114	Savoyard (Georges de)	"	"	Bains	"	"	"
Noimand (Lieu)	"	22 Ja., 85	Rebergues	Som.	7 De., 10	114	Savoyard (Georges de)	"	"	Bains	"	"	"
Obre (Emile)	"	22 Ju., 81	St. Foy-la-	Obre	19 Ju., 10	148	Savoyard (Georges de)	"	"	Bains	"	"	"
Oulanine (Serge)	Rus.	15 Se., 71	Moscow	H. Far.	9 Au., 10	158	Savoyard (Georges de)	"	"	Bains			

FROM THE BRITISH FLYING GROUNDS.

Brooklands Aerodrome.

THE early part of this week has not been very exciting with regard to the flying. Mr. Ducrocq was out with his pupil, Mrs. Palmer, on Monday. On Tuesday Mr. Pixton took the Hammond triplane for a run, but the machine, which appears to be under-powered, did not leave the ground. The Gibbs Sommer was also out with the Pashleys up. This was their first time in a biplane, but both made good straight flights. Then Mr. Anderson took a turn round the ground. He banked too much on one of the corners and appeared to slide inwards slightly. He recovered, and landed without damage. Mr. Collyer did some rolling on his monoplane. This machine goes by the name of the "Hell Hound" at Brooklands. Wednesday and Thursday were blank days owing to the wind, but work was being pushed forward in the sheds. The wings for the Martin and Handasyde two-seater are nearly finished; the body is also well on the way. This machine will be fitted with a Gnome engine, and has been purchased by Mr. Tom Sopwith. The Flanders monoplane is also growing apace, part of the machine being assembled. This machine, when finished, will have very novel wings and landing chassis. The Hanriot is still waiting for two new cylinders for the E.N.V. engine. Captain Maitland's Howard Wright is being fitted with extensions, and the reconstruction of the Macne biplane is also on the way. Friday saw several smashes. Early in the morning the Molesworth and Hughes biplane met with a slight mishap. Billing on his converted Voisin carried away the rudder and one elevator while trying to avoid Collyer's monoplane which was just starting away from the sheds. Later

on, Bell, on the Roe triplane, came to grief. He had made a straight flight from the sheds to the Wey. He turned round and was coming back, when he tried to make a turn, and turning too quickly, he dived and completely wrecked the machine. Very soon afterwards Anderson was up on the Sommer and he landed sharply on her nose not a hundred yards from the "dead" triplane, and also reduced the machine to matchwood. Collyer, on his "Hell Hound," made short hops. Ducrocq was out on his Farman. Saturday was a busy one and Brooklands had a record Saturday for the winter. The crowd almost made one think that it was a race day. Ducrocq was out on his biplane, Mr. Watkins on the Howard Wright biplane, Mr. Morison came out on his Blériot, but it only ran about twenty yards when one wheel buckled and the under-carriage was damaged. It was quite a biplane day as all the monoplanes were in dock for various reasons. Sunday was rather misty, but it cleared up by mid-day. Watkin came out and was followed by Mr. Sopwith, but they had only been in the air for a short time when fog came on and flying for the day was over. Monday was a blank day as the wind was too high for any flying to be indulged in.

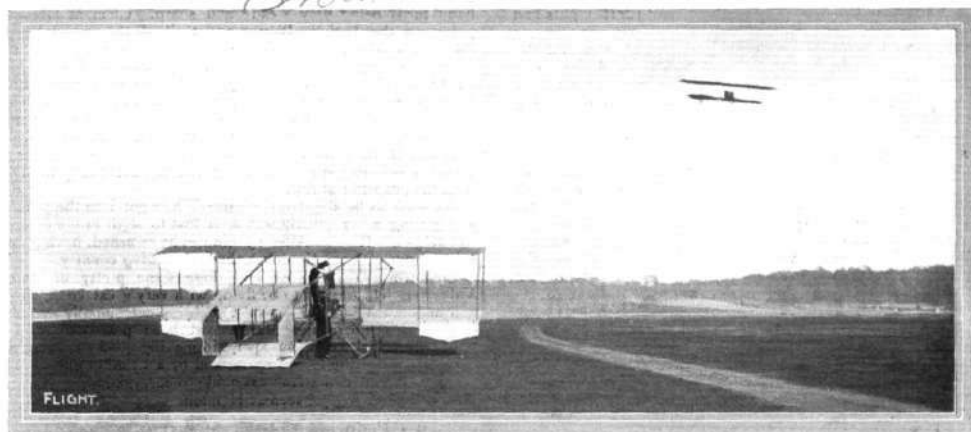
London Aerodrome.

MONDAY'S weather last week was an improvement on that of the previous Saturday, and it was not long before Greswell, one of the Grahame-White school instructors, appeared with the all-British E.N.V. Farman. He made several short flights for the purpose of tuning the engine, which was not running with quite its usual "vim."

The new addition to the Grahame-White school, the 40-h.p.



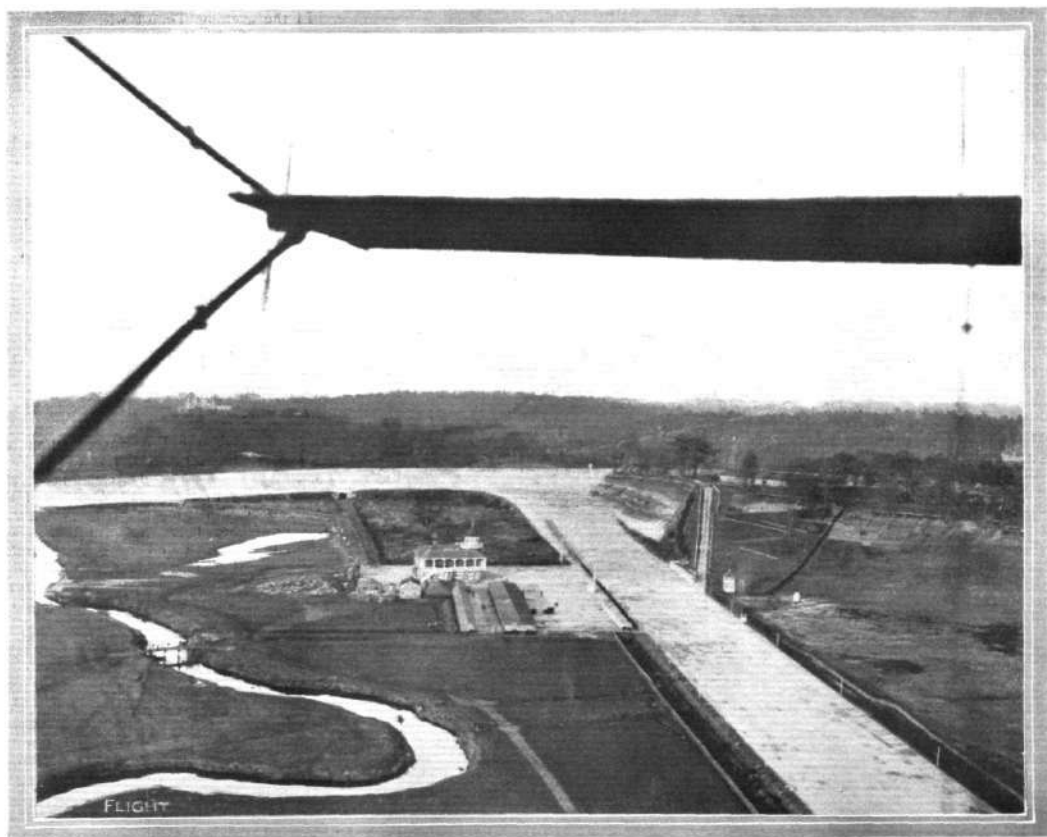
BROOKLANDS AS SEEN FROM ABOVE.—A view when passing over the flight colony at Brooklands Aerodrome on Mr. Tom Sopwith's Howard Wright. Note the "magnetic" sewage farm on the left, and in the far distance the motor test hill, finishing straight, &c.



AT BROOKLANDS ON SATURDAY.—Tom Sopwith in flight on his Howard Wright, and the Spencer-Stirling machine on the ground.

E.N.V. Blériot, had been erected during the forenoon, and at mid-day was brought out to be tested by M. Prier, who, although the machine and engine were totally strange to him, made a very good flight of about 15 minutes at a speed of 45 miles per hour.

Mr. Barber was the next to appear, piloting the Valkyrie instruction machine, on which he flew circuit after circuit very steadily. Tuesday morning was favourable for flying, and M. Prier was out early, flying with his usual grace Blériot school machines. The



BROOKLANDS AS SEEN FROM ABOVE FROM MR. TOM SOPWITH'S HOWARD WRIGHT BIPLANE.—Passing over the winding Wey and the Brooklands Club House. Note the bridge across the Wey leading to the aviation grounds.

Valkyries were also out—the instructor making short flights and giving instruction to his pupils.

Greswell, who has made such rapid progress of late, had the Grahame-White E.N.V. Blériot out and ascended, flying three circuits very prettily, terminating by gliding down to earth from 70 ft.

It was blowing very hard all day Wednesday, preventing any attempt at flight.

Thursday was very bright, but the wind had not moderated in the slightest. Nothing took place until 4.30, when Mr. Grahame-White arrived. A very treacherous 30 mile an hour wind was then blowing, but in spite of this he resolved to bring out the British E.N.V. Farman. The engine was started, and he rolled to the far side of the ground in order to get a run into the wind. Almost as soon as he turned head on, the machine lifted, and so great was the force of the wind that it was with evident difficulty that the machine was got to the end of the aerodrome. Pitching and rolling in an alarming fashion, he made a turn and swept back to the hangars at a speed approaching 70 miles an hour. Having evidently satisfied his desire to fly, he brought the machine to earth after one circuit and retired to the hangars.

It was misty early on Saturday morning, but towards 10 o'clock the sun broke through, dispersing the fog.

Greswell was the first to make an appearance. Flying the Grahame-White school E.N.V. Blériot, he mounted, in the course of a ten minute flight, to a height of 150 feet, finally gliding to earth and landing with his engine stopped. It is worthy of note that this was his first attempt at a *vol plané* on a Blériot.

He did not remain at rest long, however, but quickly rose again, repeating the same manoeuvre.

After lunch Greswell mounted the Gnome Blériot or the first time and made a cross country trip of about 20 minutes, almost going out of sight in the direction of Golders Green. Returning to the aerodrome at an altitude of 150 feet he alighted *en vol plané*. He gave up his seat to Mr. C. Grahame-White, who then made his first flight on a Blériot since his return from America. Rising at a sharp angle he flew around outside the aerodrome, remaining up for about a quarter of an hour, then coming to earth with one of his characteristic *vol plans*. The Valkyrie passenger-carrying machine was very much in evidence during the day doing good work, Mr. Barber making several trips with and without passengers. Maj.-Gen. Baden-Powell and Mr. Holt Thomas were taken for flights on this machine, and on alighting, both expressed themselves delighted with its steady behaviour in the air. Several clever flights in the form of a figure eight were made, the right

hand turns being very steady and sharp. Clement Greswell got going on the E.N.V. Blériot and thrilled the crowd by gliding down to within a few feet of them, and then going aloft without touching ground. Grahame-White, on descending, invited M. Prier to fly his Gnome Blériot. He readily assented and within six minutes was at a height of quite 3,000 ft. His descent was remarkably pretty and well judged, taking the form of a very slow spiral *vol plané*. His time for descent was 2 mins. 40 secs.

Greswell then took over the same machine, and for about 10 minutes indulged in trick flying, landing eventually from 600 ft. with his propeller at rest.

As soon as he alighted Grahame-White got into the pilot's seat, and getting away quickly was soon lost to sight in the direction of the Edgware Road. After 15 minutes he returned, having been for a little tour of inspection over the surrounding country.

Meanwhile Mr. Barber had done some pretty flights on the Valkyrie. He seemed to be flying with very great confidence, and ventured much higher than usual, alighting occasionally *en vol plané*.

Messrs. Herbert and Martin had been practising on the old "Blue Bird," and were successful in making good straight flights.

Greswell was the last to retire, and by a 15 minute flight, terminating, as usual, with a faultless glide to earth, completed about the busiest day's flying yet seen at Hendon.

Salisbury Plain.

THERE is not a great deal of work to record at Salisbury Plain last week, although M. Tetard was out several times on the Bristol biplane. Saturday morning was beautiful and sunny and M. Tetard was up early, flying at a height of about 1,600 ft. around Stonehenge, Amesbury, Bulford Camp, &c. In the afternoon he was out with Versepuy, and flying very high made two complete circles of about 15 miles each. M. Louis Maron was flying for the first time alone and after making several straight line flights rose to a height of 120 feet and completed a circle of about 8 miles circumference. In the evening Tetard with Versepuy as passenger made a cross-country flight of 55 minutes at a height of 2,100 feet. After only having been in a biplane on five occasions. Lieut. Conner was flying for his pilot's certificate. Captain Fulton was at Larkhill on Saturday, looking well after his recent trip to France, for the purpose of testing the Paulhan machine purchased by the British Government.

No flying was possible on Monday owing to the rough winds but all the flyers were busy in the sheds tuning up their motors in anticipation of fine weather.

NEW BRITISH PRIZES.

A New British Michelin Prize.

At the Royal Aero Club Dinner, on Tuesday night, an announcement was made with regard to a new competition for prizes offered by the Michelin Tyre Co. The prizes will be awarded to the competitor who covers, before October 15th of each year, a given cross-country circuit in the least time. For this year the prize will be £400 and a trophy, and the minimum distance to be flown 125 miles. For 1912 the prize will be increased to £600, while the minimum distance will be increased by one half, and in 1913 there will be a further increase of distance, and the prize will be £800. These prizes are reserved for British flyers on British-built machines.

A £500 Prize for "Safety."

ON the same occasion as the above, Mr. Edward Manville, following upon the suggestion of the Chairman, the Duke of Argyll, that what was wanted was a "fool-proof" aeroplane, offered a cash prize of £500 for a "safety" machine to be all-British, and the competition to be open during 1911. The detailed regulations will no doubt be published later.

£1,000 in Prizes for the Army and Navy.

A GENEROUS prize of £1,000 has been offered by Mr. Mortimer Singer, the aviator who last year met with such a serious accident when flying at Heliopolis, half each for the Army and Navy. These prizes of £500 will be awarded to the army pilot or navy pilot respectively who fly, while on the active list, the longest distance during 1911.

Brooklands Cross-country Prize.

A NEW prize has been offered by the Brooklands Automobile Racing Club for a cross-country flight between the Royal Aero Club's Ground at Eastchurch and the Brooklands Aerodrome. The flight may be made on any Saturday in February, or on any of the first three Saturdays in March. Competitors may start when they like, but they must land at Brooklands between 2 p.m. and sunset. The time will be taken from the moment of leaving the ground at Eastchurch until the time for alighting at Brooklands, and the prize of £50 will be awarded to the aviator making the fastest time. Forty-eight hours' notice of prospective attempts must be given to the Brooklands Club.

AERONAUTICAL CLASSICS, NO. 5.

AGAIN it is a pleasure to announce the appearance of yet another of these admirable little volumes, which must surely find a place among its fellows on the bookshelves of everyone genuinely interested in flight. This particular work deals with Percy S. Pilcher and John Stringfellow, but why they should have been put together is somewhat of a mystery, for each occupies enough space to make a little book of its own, and surely it were worth paying a shilling to the memory of each of these deservedly famous men.

Percy Pilcher was the first Englishman to seriously take up gliding, and was contemporary with Lilienthal, whose machines he flew. His own gliders were not unlike those of Lilienthal, although

distinctly original in design. Unfortunately, Pilcher met with a fatal accident during one of his experiments, and England was thereby deprived of a man whose energy and enthusiasm would unquestionably have gone far to have prevented the somewhat noticeable absence of this country from the pages of the history of aviation from Lilienthal's time until quite recently.

Of the aeronautical work of John Stringfellow a fair amount is known, but this particular volume contains several hitherto unpublished letters of considerable interest. To the credit of England be it remembered that Stringfellow made the first engine-driven aeroplane that flew.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Competitions Committee.

A MEETING of the Competitions Committee was held on Monday, the 30th January, 1911, when there were present:—Mr. Mervyn O'Gorman, in the chair, Mr. Ernest C. Bucknall, Col. H. C. L. Holden, R.A., F.R.S., Prof. A. K. Huntington, Major F. Lindsay Lloyd, Mr. J. T. C. Moore-Brabazon, and Harold E. Perrin, Secretary.

"Daily Mail" £10,000 Prize.—The draft rules were again considered.

Gordon-Bennett Aviation Cup Contest.—The special sub-committee reported on the various grounds visited. It was decided to defer any decision until the next meeting, to be held on Monday, February 6th, 1911.

Army and Navy Aviation Prizes.—Draft rules for the Army and Navy prizes, presented by Mr. A. M. Singer, were considered.

Gordon-Bennett Aviation Cup, 1911.

On Friday, January 27th, 1911, Mr. Ernest C. Bucknall, Prof. A. K. Huntington, Major F. Lindsay Lloyd, Mr. J. T. C. Moore-Brabazon, and the Secretary, visited Didcot with representatives of the Great Western Railway, and inspected the surrounding country.

International Aero Exhibition at Olympia.

The date of the International Aero Exhibition, held by the Society of Motor Manufacturers and Traders under the auspices of the Royal Aero Club, has been altered, and the Exhibition will now open on Friday, March 24th, and terminate on Saturday, April 1st, 1911.

Full particulars can be obtained on application to the Exhibition Manager, Society of Motor Manufacturers and Traders, Maxwell

House, Arundel Street, Strand, London, W.C., or the Secretary, Royal Aero Club, 166, Piccadilly, London, W.

In connection with the Exhibition it is proposed to organise an exhibit of model flying machines. Space will be given free, and the Royal Aero Club will erect suitable stands and provide the necessary attendants. In order to partly cover this expense a charge of 10s. will be made for each model exhibited. It is proposed to award Medals and Cash Prizes.

Members of the Royal Aero Club will be admitted free on production of their membership cards.

A room in the Princes' Gallery will be placed at the disposal of the members during the Exhibition.

Gordon-Bennett Aviation Cup.

The Cup, having been won last year by Mr. C. Grahame-White, the nominee of the Royal Aero Club, the race for 1911 will be held in England. The exact date and place will be announced later.

Each Club forming part of the Fédération Aéronautique Internationale has the right of challenging the holder, the Royal Aero Club, and such challenge must be received before March 1st, 1911.

The Committee of the Royal Aero Club will select the three competitors and reserves representing the United Kingdom. Intending competitors are requested to notify the Secretary on or before February 28th, 1911, of their willingness to compete if chosen. Applications must be accompanied by a cheque for £20, the entry fee, which amount will be returned should the competitor not be selected.

Candidates must be members of the Royal Aero Club.

HAROLD E. PERRIN.

Secretary.

166, Piccadilly.

PROGRESS OF FLIGHT ABOUT THE COUNTRY.

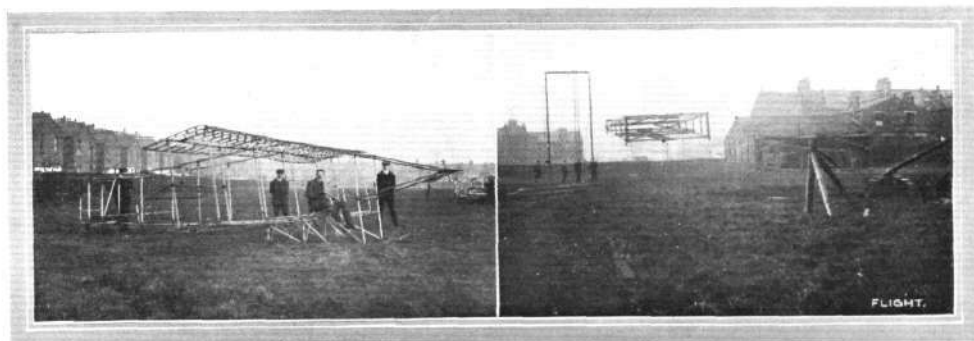
NOTE.—Addresses, temporary or permanent, follow in each case the names of the clubs, where communications of our readers can be addressed direct to the Secretary. We would ask Club Secretaries in future to see that the notes regarding their Clubs reach the Editor of FLIGHT, 44, St. Martin's Lane, London, W.C., by first post Tuesday at latest.

Aeroplane Building and Flying Soc. (8, MANCHESTER ST., W.).

THE accompanying photographs taken at the Society's headquarters at Kensal Rise will doubtless be of some interest to readers of FLIGHT. In the first the biplane shown is entirely the work of members, nothing having been purchased but absolute raw material. Being intended as a school machine the design is quite orthodox, but there are several features more or less novel that may be useful to others intending to build a machine at a low cost. The control is one of them. It is intended to be quite instinctive, and the whole machine is worked by one lever. In order to test how far the movements were natural, a small boy who had never seen an

aeroplane before was put into the seat and asked what he would do if he wanted to make the front lift. He immediately tried to pull it up by pulling the lever towards him. This, as shown, works both the elevators, raising the front and depressing the back. The rudder is worked by using the handle bicycle fashion, and was also successfully manipulated by this embryo pilot. In balancing, one naturally leans to the highest side, and this rocks the handle bar on its pivot and raises one balancing plane while depressing the other. All these movements the small boy carried out without any tuition.

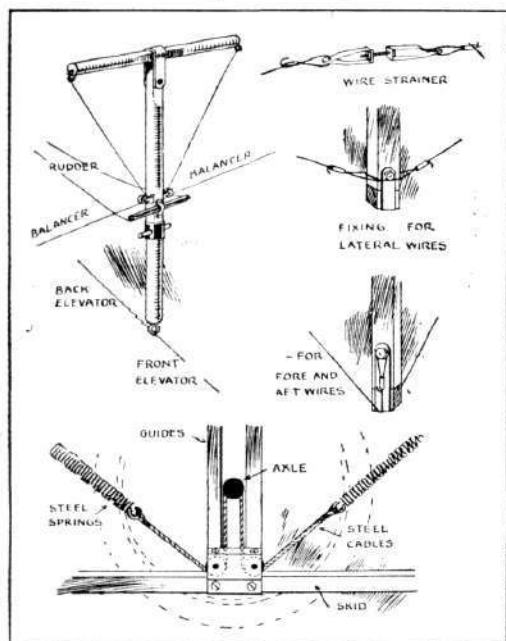
The wire strainer shown in Fig. 2 is made of $\frac{3}{8}$ -in. 22 gauge strip steel and an ordinary bolt and nut, the bolt being turned by a



A snapshot, on the left, of the biplane built by the Aeroplane Building and Flying Society at their ground at Kensal Rise. It is intended as a school machine, and the control arrangements embody several useful features. On the right is seen the artificial gliding "hill" built by the Society at the Kensal Rise ground. The trolley on which the glider is placed is seen half way down the "track." In the background will be noticed the Society's biplane standing just outside the shed.

pair of grips. Total cost, about 13d. As there are some four dozen wire strainers in the machine, this means a considerable saving for the cheapest articles that can be bought are about 6d. each.

Figs. 3 and 4 show the strut fixing, each strut being held to the spar by a clip of 1-in 22 gauge strip steel. The bolt holding this serves also to hold the straining wires in place, each wire going right round the strut and clip under the bolt, and the fore and aft



wires going round the head of the bolt and under the spar where it is protected by the clip. A small bracket of the same steel screwed on to the spar, stops all lateral movement.

The wheels, Fig. 5, are simply bicycle wheels both on one axle, the ends of the axle running between two guides. A clip over the axle end holds a steel cable, which, passing over two pulleys at the foot, is attached at each end to a pair of steel tension springs. Each spring is capable of holding 56 lbs., with a stretch of 10 inches, so the four of them at that length support 2 cwt. The skids do not touch the ground until the springs have stretched 11 inches. The price of these springs is 1s. each; the price of rubber ones is 7s. each.

The dimensions of the machine are: span 27 ft., front to back 30 ft., chord 5 ft., camber 2 in., weight about 130 lbs. The whole machine can be lifted from any of its extremities and the planes have been tested by standing a 12-stone club member on each end of the wing.

The second photo shows the Society's gliding hill with the trolley half way up the cables. When the biplane has been tested for balance, lifting power, speed, &c., it is proposed to start it off by placing it on the trolley. This is then pulled up to the top of the mast, and the pilot by snicking the rope lets go. The whole business glides down the cables with accelerating speed. The sag in the cables allows the machine to keep at a negative angle of incidence for the first part of the journey. At about half way the speed is estimated to be 35 m.h.p., and the angle of incidence becomes positive. The pilot may then raise his elevator, in which he is assisted by the slope of the cables, and the machine answering, lifts off the trolley and glides to earth from a height of about ten feet. The trolley swoops down the rest of the cables and is stopped by the spring board and bridle arrangement at the bottom. This idea is intended to take the place of a sloping field which is so difficult to find near London, and the structure being simple and very strong can be put up anywhere, so that gliding may be practised on any ground where there is room for a run.

The photo also shows the Society's aeroplane shed in the background. The shed is big enough to house both the biplane and the monoplane now almost completed, and it was built entirely by the members. The biplane is shown just being taken inside.

A Model Club for Willesden.

A NUMBER of persons interested in flying matters having suggested the formation of a club in Willesden, Mr. Claude Dudgeon of 108, Church Road, Willesden, is taking the initiative, and anyone who wishes to have further particulars of the proposed club is asked to communicate with him, when steps will be taken for calling a meeting.

Conisborough and District Model Ae. Soc. (18, CHURCH ST.).

MEMBERS are reminded of the entertainment which will be given in the Church Hall, Conisborough, on Thursday next. The programme will consist of a musical and dramatic entertainment, concluding with a lecture on aviation by the Secretary, illustrated by a magic lantern. The tickets are 6d. and 1s. each, and the proceeds will be devoted to the funds of the Society.

Clapham Aero Club.

THE first competition of the above club was held on Saturday, January 28th, and passed off very successfully. The prize was offered for the best all round model. To decide this, a number of marks were given for each event, i.e., stability, control, altitude, &c. The winner was Mr. W. E. Thorpe, with his "Type No. 6 Albatroplane." This model is a really beautiful flyer, its stability, both laterally and longitudinally, being practically perfect.

Competitions are for our members only, and professionals are not admitted as members of this club.

The Secretary will be pleased to receive catalogues, &c., from the various accessory dealers, &c.

Manchester Aero Club (22, BOOTH STREET).

ON Friday, January 20th, a lecture on the "Conquest of the Air" was delivered by Mr. A. E. Berriman before the members of the club, and a considerable attendance of the general public, at the Municipal School of Technology. The meeting was to have been presided over by the Lord Mayor, but ill-health prevented his presence, and the Principal of the School, Mr. J. H. Reynolds, consented to take the chair.

Mr. Berriman divided his lecture into two principal sections, one dealing with the work of pioneers, the other with the technology of modern flight. In the former he traced, as briefly as possible, the conquest of the air from the earliest periods of concrete thought on aviation, showing by means of a variety of illustrations the different ideas of such pioneers as Da Vinci, Lana, Cayley, Montgolfier and others. Particularly interesting were his remarks relating to the discovery of the hot air balloon and the subsequent substitution of hydrogen for Mr. Montgolfier's gas.

Another suggestive reference was that made when discussing the subject wherein Mr. Berriman remarked on what might have been the present state of the art of flight had the present race been practised in gliding from childhood and by custom throughout preceding generations. Gliding, as the lecturer pointed out, might have been introduced years before Lilienthal invented it and it might have come to be looked upon as a not less unnatural art than swimming.

One phase of gliding flight was illustrated by the use of a variety of paper models of all kinds and shapes, and the construction of such instructive toys to the rising generation was recommended. He also put forward a suggestion that the encouragement of gliding might be included among the activities of the Manchester Aero Club when they acquire the new aerodrome that they hope to possess.

The concluding part of the lecture was devoted to stability, and a demonstration was given of certain phenomena associated with the action of a gyroscope.

Sheffield & District Ae.C. (22, MOUNT PLEASANT RD., SHARROW)

THE club will hold a special general meeting on the evening of Monday next, 6th inst., at 8.15 sharp, at the Wentworth Café, Penstone Street, City. Important business will be reported by the Committee, and a discussion will take place. Every member is requested to attend this meeting without fail. The secretary also has a quantity of literature awaiting disposal among the club members.

Sheffield Model Aero Club (35, PENRHYN ROAD).

A MEETING of the above club will be held at Staniland's Restaurant, West Street (opposite Carver Street), on Wednesday, February 3th, at 8 p.m. All those interested and wishing to become members should attend as there is some very important business to discuss. Messrs. Blake Bros., West Street, will be pleased at any time to give further particulars to interested enthusiasts and also to receive all contributions. The club will be pleased to receive show cards and catalogues.

BRITISH NOTES OF THE WEEK.

Mr. Paterson's Progress.

TAKING advantage of the fine weather Mr. Compton Paterson, on Friday of last week, made some good flights with his new biplane, built by the Liverpool Motor House Ltd. In general design the biplane is similar to Mr. Paterson's previous machine, but naturally embodies several improvements suggested by his experience with this successful machine. It has been built to the order of M. G. Higginbotham and is intended to carry two persons. With Mr. Topham as passenger, Mr. Paterson took the machine in its first flight in the direction of Ainsdale, and then turning round, went down the shore and over the sandhills in the direction of Altcar before returning to the starting point and planing down in fine style just by his shed. In the next trip Capt. Joll, R.A., was taken towards Formby and Altcar, while in the third trial Mr. Paterson took his mechanic for a short trip. Afterwards, Mr. Paterson made four flights on Mr. King's Farman machine, the first with Capt. Barker, R.A., the second with Mr. King who was taken over to Mr. Melly's headquarters at Waterloo, the third with Mr. Joseph Edge, and the fourth with Mr. King again. On Saturday afternoon Mr. Paterson twice flew from Freshfield to Southport and back, the first time on his own machine, and the second on Mr. King's Farman biplane.

Aviation at Scottish Exhibition.

WHAT promises to be one of the most interesting sections at the forthcoming Glasgow Exhibition will be that organised by the Scottish Aeronautical Society. A large number of models and various fittings and instruments connected with the aeronautical industry will be on view, as well as one of the late Mr. Pulcher's gliders. It is also hoped that it will be possible to arrange for two full-sized aeroplanes to be on view, and promises have been made which will permit of this portion of the exhibit being changed from month to month. Lectures on aviation will be given during the continuance of the Exhibition, and it is also proposed to organise competitions for models, &c.

Flight Exhibition at Olympia.

It has now been decided that the Olympia Exhibition shall open on March 24th, a fortnight later than originally proposed, and close on April 1st.

"Work of the School Aero Club."

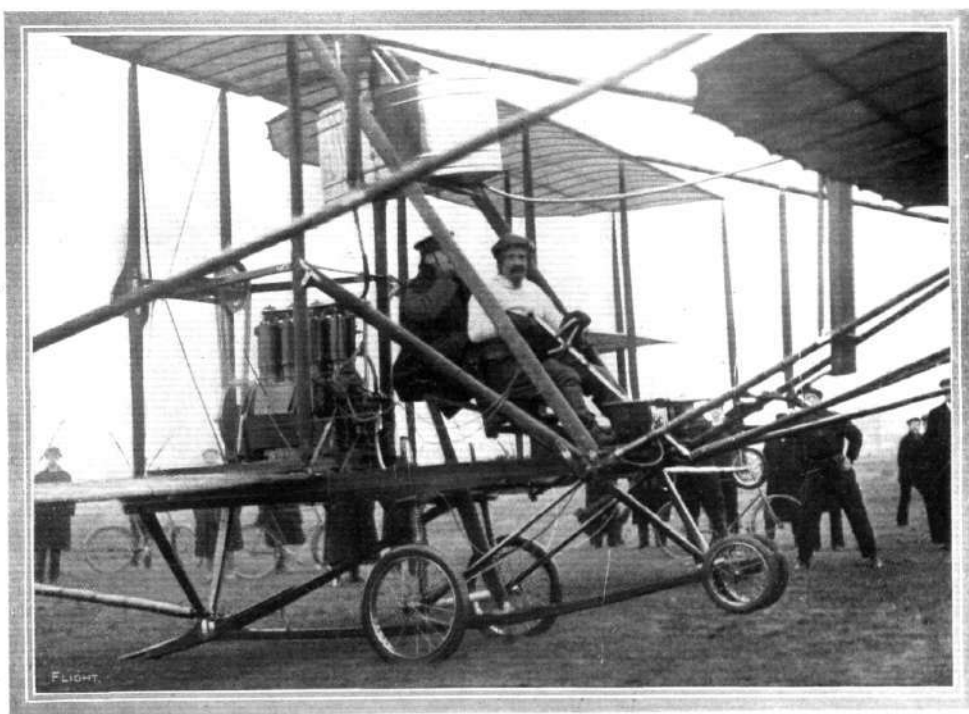
SECRETARIES and others interested in the formation of School Aero Clubs should make a note of the paper on the above subject, which Mr. R. P. Grimmer, who will be remembered for the splendid work he has done for the Arundel House School Aero Club, is to read before the Aviation Section of the A.A. and M.U., at Caxton House, Westminster, S.W., on Tuesday next, the 7th inst., at 8 p.m. It will be illustrated by a number of lantern slides.

Rules for Pilot-Aviator's Certificate.

OUR readers will remember that the 15th inst. is the date fixed for the introduction of the new rules governing the issue of pilot-aviators' certificates which will then be uniform in all countries represented on the Federation Aeronautique Internationale. The principal alterations are that the aviator must fly at a height of 50 metres, and also that he must cover the course in the form of a figure eight. Details of the tests required appeared in *FLIGHT*, November 19th, 1910.

Mr. Grahame-White to Write a Book.

IN spite of the many demands upon his time Mr. Claude Grahame-White has undertaken, in collaboration with Mr. Harry Harper, to write a book on aviation. It will be entitled "The Aeroplane, Past, Present and Future," will be illustrated with nearly 100 pictures, and published by Mr. Werner Laurie very shortly. Several well-known aviators have consented to contribute special chapters on the subjects in which they specialise. Blériot, Farman, Paulhan and Robert Loraine will be among those who will assist Mr. Grahame-White in this way, and a military expert will deal with flying from that point of view.



Mr. S. F. Cody, with Major Sir Alexander Bannerman, Commandant of the Army Balloon School at Farnborough, as passenger on his biplane, ready for their flight last week.

Changes at Rubery Owen and Co.

THE terms of the partnership between Mr. J. G. Rubery and A. E. Owen having expired at the end of last June, Mr. Rubery has taken the opportunity of retiring from active participation in the business.

Mr. Owen, who has been connected with the motor industry for the past fifteen years, is continuing the business under the old style, and is determined to devote full attention to the aeroplane industry.

The firm have a large and up-to-date hydraulic pressing plant,

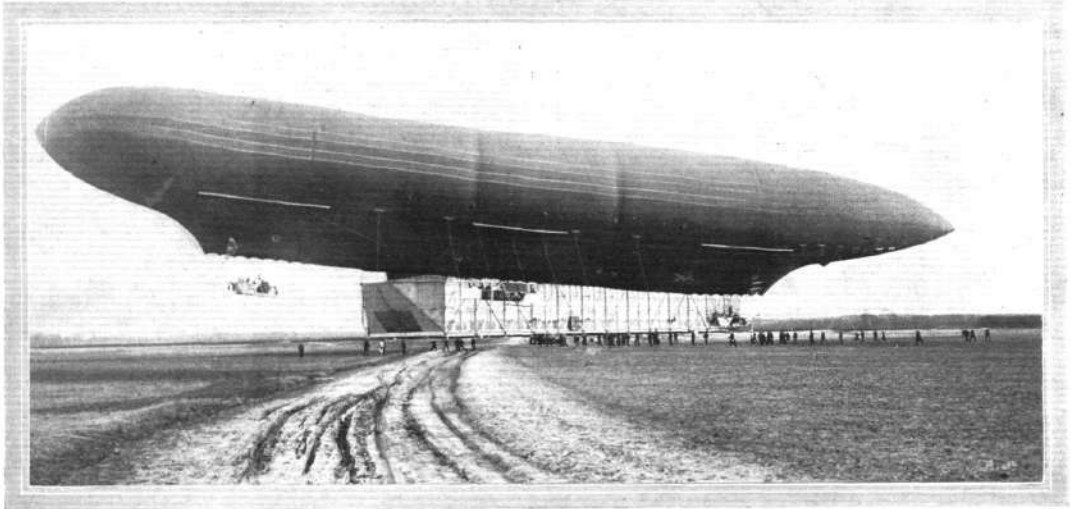
and are prepared to go fully into the matter of aeroplane framework and fittings.

Testing Zimmermann Radiators.

DURING two flights made by Mr. Cody on Monday of last week his passenger was Mr. P. O. Serck, of the Motor Radiator Manufacturing Co. This firm has just made a radiator for Mr. Cody's machine, and the flights, which we understand were very successful, were in the nature of tests. The first was a flight of 5 miles, and the second of 10 miles, during which an altitude of 100 ft. was reached.



AIRSHIP AND BALLOON NEWS.



The latest airship—the semi-rigid Siemens-Schukert, which last week, as reported, made its maiden voyage at Berlin.—The dirigible is just ascending, the building in the background being the Siemens-Schukert revolving shed. Note the three cars as described last week.

"Beta" and Wireless Telegraphy.

DURING the instructional cruise made by "Beta" on Saturday last communication was kept up with headquarters at Farnborough by means of wireless telegraphy. The trip lasted for over an hour, and taking a southerly course the airship was steered to within a few miles of Portsmouth before turning and making a wide westerly detour on the return journey to Farnborough.

The German Transatlantic Airship.

NOTHING daunted by the fate of Mr. Wellman's airship, the promoters of the German Transatlantic airship expedition are actively pushing forward with their arrangements. The airship "Suchard" is nearing completion at Kiel, and it is stated that it will probably be named by Princess Henry of Prussia on February 15th. The start is to be made from the Azores and the promoters are confident that they will be able to steer their craft to America.

A Parseval Company Winds Up.

UP to the present very little financial success has attended Companies formed for the purpose of arranging trips by dirigible.

Last week a meeting was held at Munich of the Parseval Luftfahrzeug Gesellschaft when it was decided to wind up the Company. The hangar built for the dirigible will now become the property of the City of Munich.

Another Balloon Wedding.

FOR some reason or other the idea of getting married in a balloon did not become so fashionable in America as it was anticipated. A Texan couple, however, in search of the sensational, decided the other day that this was the only method to ensure their future happiness. Rising from the ground just by San Antonio, in Texas, in a balloon, piloted by Mr. H. E. Honeywell, and accompanied by the Rev. J. H. Adams, a Presbyterian minister, Mr. Walter Stow and Miss Marie Shelton enjoyed the experience of being married in the clouds above their native city of San Antonio. The ceremony completed, the balloon drifted on for a honeymoon trip of thirty-five miles, when the balloon was brought down in a wood. After a walk of three miles the young couple secured a motor car which took them back to San Antonio.



Florida-Havana Flight.

IN the presence of about 10,000 spectators, Mr. McCurdy on Monday started off from Key West, the southernmost of the chain of islands off the Southern Coast of Florida, to fly to Havana in Cuba.

The weather, for which Mr. McCurdy had been waiting for a week, was practically ideal for the attempt. He rose to a height of 1,000 ft., and after circling above the harbour steered straight for his destination, about 100 miles away. Following the chain of torpedo boats which had been stationed in the channel by the Naval

authorities, Mr. McCurdy made satisfactory progress until within about ten miles of the coast of Havana, when he was obliged to come down owing to his lubrication oil giving out. His biplane was, however, fitted with floats, and he was thereby enabled to alight on the surface of the water and calmly await the arrival of a torpedo boat destroyer, which rescued both him and his machine. Mr. McCurdy made an endeavour to start again from the deck of the destroyer, but did not succeed in getting away. The flight was made in an attempt to win the prize of £1,600 recently offered, and Mr. McCurdy intends making another try shortly.

FOREIGN AVIATION NEWS.

Six in an Aeroplane.

M. ROGER SOMMER, who has for some considerable time been studying the question of passenger carrying by aeroplane, achieved a notable record on Thursday of last week, when, accompanied by five friends, he flew from Douzy to Romilly and back. Two of the passengers were accommodated on the skids of the machine and the remaining three perched themselves up behind the aviator. The lightest of the passengers weighed seven and a half stone.

Grade also Carries Five Persons.

ALTHOUGH little has been heard of the Grade machine as a passenger carrier hitherto, Herr Grade demonstrated the qualities of his flyer in that direction on the 21st and 22nd ult., when he made several trials with four passengers on board the monoplane, and finished up with a short trip with five persons on board.

Rapid Tuition on a Hanriot.

A NEW record is claimed for the Hanriot School in that they have taught two flyers to manipulate their machines within the period of two days. On Friday of last week Boillot and Goux, the two well-known drivers of Lion-Peugeot voituresses, arrived at the school at Rheims, and after the first lesson one flew for 20 minutes and the other for four rounds of the course, while during the afternoon of the following day they both made the necessary flights to secure their pilot-aviator's certificate.

Train at Hyères.

HAVING transferred his monoplane from Mourmelon to the neighbourhood of Hyères, Train on the 26th ult. made a splendid flight above the sea and the town, and descended in a spiral flight. He was also flying on Sunday above the town at a height of 450 metres, while Mollien on a Blériot was out for 50 minutes.

Doings at Issy.

SEVERAL of the flyers at Issy during the last week-end indulged in little jaunts over Paris and the Bois de Boulogne. On the 26th, Mahieu made a flight of half an hour during which he flew over the Champs Elysees, while on the following day Cei and Grandseigne flew above Paris and the Bois de Boulogne. Grandseigne repeated his exploit on Saturday when he concluded his flight by a *vol plané* of a minute and a half.

Vedrine High Flying.

ON the 26th ult., at Juvisy, Vedrine was practising high flying with his Goupy machine, and during one attempt he succeeded in getting to an altitude of 1,000 metres in 10 minutes. On Sunday he was also up to a height of 900 metres, flying over Juvisy and Savigny.

Another Train Pilot.

ALTHOUGH M. Train himself has left Mourmelon, the camp is not without a proficient demonstrator of this type of monoplane. On the 26th Crochon was flying for half-an-hour, while on the following day he was up for over an hour passing over the country at a good height.

Monoplanes at Mourmelon.

ON the 27th ult. Chevalier on a Nieuport monoplane flew from Mourmelon to Suippes and back, while Paul Leprince was flying above the country. Lieut. Pequart as well as other military officers are now learning on this type of machine and the first named made a flight of half-an-hour. Madame Niel was also flying on her Koechlin monoplane, and made two trips of a quarter of an hour each. On the following day, Saturday last, Leon Bathiat flew over to Betheny and back on his Sommer monoplane, while Boyer and Louis Chatain were up for an hour on an Antoinette, passing over Mourmelon, Bouy and Vadenay.

Another Monoplane Convert.

FREV, who achieved his earlier successes on biplanes of the Farman type, is now at Pau learning to fly the Morane monoplane, and on the 27th he was flying for 50 minutes at a height of 300 metres. Two flights of an hour each were made by him on the following day. Another monoplane convert is Pierre Gasnier, the one-time Wright pilot, who, after only five lessons, has qualified at Pau on a Blériot monoplane for a pilot's certificate. A splendid flight was made by Schneider on the same date, when in the course of a trip of an hour's duration, on a Blériot, he flew over the country and round the church spire at Morlaas.

The Hanriot School at Rheims.

ON the 27th ult., Marcel Hanriot was trying a new monoplane which has been designed to carry a useful load of 37.5 kilogs. per square metre of lifting surface. On the same day his father was flying for three hours, covering more than 200 kiloms. during that time.

Cannes to Nice and Back.

ACCOMPANIED by his friend the Marquis de Villeneuve-Trans, the Count de Robillard left the Brague Aerodrome, just by Cannes, on Saturday afternoon and flew over to Nice where he landed on the ground of the Polo Club at Mandelieu. In landing, the propeller was slightly damaged, but this was put right during the day and on Sunday he flew back to Cannes.

High Speed by Caudron Biplane.

IN the course of a flight of about three-quarters of an hour at Crotoy (Somme) on Saturday afternoon Caudron attained a speed of about 95 kiloms. per hour. The flight was terminated by the lubricating oil supply giving out.

Legagneux at Nice.

TWO splendid flights were made by Legagneux, at Nice, on Sunday last. In the morning he left the California Aerodrome and flew along the Promenade des Anglais and then returned to the starting place. Later in the afternoon he repeated this exploit at a height of 150 metres, much to the appreciation of many spectators along the promenade.

Rights of the Air.

MR. MAURICE FARMAN is still experiencing trouble with some of the farmers in the neighbourhood of his aerodrome at Buc. It



Marriage of Comte Jacques de Lesseps to Miss Grace Mackenzie on Wednesday of last week.—The bride and bridegroom at the reception at Claridge's Hotel after the wedding. On the left are Sir William and Lady Mackenzie, the parents of the bride, and on the right the bridegroom's brother.

will be remembered that some time ago they applied to the Courts for an injunction to prevent him from flying over their land and houses. They have now, however, limited their demand to the prohibition to travel in the air over their property at a lower altitude than 200 metres. Mr. Farman, however, refuses to accept that limitation, and consequently the case will be argued before the Court.

Flying to Lunch.

FIVE aviators in training at Pau, including three military officers and one naval officer, decided the other day to fly from the aerodrome to Tarbes, some 20 miles away, and partake of lunch there. Lieut. Malherbe, Naval Lieut. Conneau, and M. Morin reached the rendezvous as arranged, but their two friends lost their direction, and although they eventually arrived, were too late for lunch.

Juvisy to Issy and Back.

TAKING advantage of the calm weather, Vedrine, on the 24th ult., left Juvisy at 3 o'clock in the afternoon and landed at Issy-les-Moulineaux twenty-one minutes later, having circled the Eiffel Tower on his way. After a rest of three-quarters of an hour he once more mounted his machine and set out on the return journey, landing safely in front of the Goupy shed at Juvisy after a flight of 25 mins.

A Baby Farman.

ON the 24th ult. Mr. Henry Farman was testing a new machine which has just been built and which only has a supporting surface of fourteen square metres designed to carry a load of 30 kilograms per square metre, which it is claimed is a record. Further details of this interesting machine will be awaited with considerable interest.

Tabuteau to Try a Monoplane.

ALTHOUGH he has achieved considerable success on a biplane Tabuteau is determined not to stop there, and so has migrated to Pau, where, under the guiding hand of Aubrun, he is learning to manipulate a Morane monoplane.

Prince de Nissole a Pilot Aviator.

USING his Tellier monoplane, fitted with an R.E.P. engine, the Prince de Nissole succeeded in making the necessary tests in order to secure a pilot aviator's certificate on the 25th ult. On the same day the Tellier monoplane, also fitted with an R.E.P. engine, bought by the Russian Government, was being tested by Becue.



M. Vedrine, who has been making such fine flights at Issy on the Goupy biplane.

Vidard Flies to Chalons and Back.

WISHING to visit some friends of his at Mourmelon, Vidard, on Sunday afternoon, on his Gnome engined Deperdussin monoplane, flew from Betheny to Chalons, passing over Rheims on the way. Later in the day he returned to Betheny, passing over Scheiber and Courcy.

Vedrine's Cross-Country Trips.

ONE of the best performances so far of Vedrine on his Goupy biplane was the circuit of 250 kiloms. across country which he covered on Friday of last week. Leaving Juvisy at twenty minutes to nine he steered in the direction of Melun, where he landed thirty-five minutes later. At half-past ten he was once more in the air, this time winging his way to Chartres, the 65 kiloms. being traversed in fifty-three minutes. After a few minutes' stop there, he set off for Versailles, but the necessity for making a slight adjustment caused him to land at La Verriere. Quickly putting matters right he rose again and flew over to M. Paulhan's headquarters at St. Cyr, from where, after a short rest, he started off on the last stage of his journey and landed at Juvisy at half-past three.

French Student Pilot-Aviators.

SIX of the students from French State Schools, which the Ligue Nationale undertook to see instructed in aviation, have now qualified for their pilot-aviator's certificate. These are MM. Harle, Grezard, Schlumberger, and Peloux from the Polytechnic School, M. Leyat from the Central School, and M. Carles from the Colonial School. In addition to these a student from the School of Roads and Bridges, and another from the School of Mines are undergoing training.

High Flying at Pau.

ON Saturday, Lieut. Rose left the Blériot School at Pau and passing to the north of the town flew to Aire-sur-l'Adour, about 50 kiloms. away, and he arrived back at Pau after an absence of 1 hr. 18 mins. The barograph on the machine showed that an altitude of 1,100 metres had been reached. On the same day Lemartin flew over the town at a height of 1,500 metres.

Pau to Biarritz.

USING his Blériot monoplane Morin left Pau at 4 o'clock on Saturday last in the direction of Biarritz, where he landed one hour and three minutes later. The distance covered was 110 kilometres, and during the trip an altitude of about 700 metres was maintained.

Wireless Telegraphy on Aeroplanes.

CONTINUING the series of tests with wireless telegraphy which are being made at Buc, on Maurice Farman biplanes, messages were successfully transmitted on the 23rd ult. over a distance of 12 kiloms., and it is believed that it would have been possible to transmit them over a distance of between 40 and 50 kiloms. Count la Baume Pluvinel was a passenger on the biplane and in charge of the transmitting apparatus. It is now proposed to fit the machine with a receiving instrument and endeavour to pick up messages in addition to sending them.

Léon Morane Better.

AT last Léon Morane has got over all his troubles consequent upon the injuries sustained during his fall last autumn, and the doctors hope that in six months time he will be completely restored to health. After making satisfactory progress for some time his case suddenly became serious a few weeks ago, owing to a clot of blood forming and threatening the lungs. This, however, has since been dispersed, and the aviator is now out of bed and able to get about a little on crutches. All interested in aviation will join with us in wishing him a speedy recovery.

The Death of Picollo.

FURTHER particulars regarding the death of Picollo at San Paulo, Brazil, are now to hand from his mechanic, Paul Rugere. It appears that the aerodrome was a very small one indeed, and, on landing from one of his flights, Picollo vaulted out of the machine, intending to hang on and so bring it to rest in the manner adopted by Leblanc. Unfortunately he stumbled and fell under the machine and his head was caught by the lower end of the mast to which stay wires were attached. The injuries sustained were so serious that Picollo died within a short time.

Monoplane Mails in Madagascar.

ON the 25th ult., at Pau, Raoult made a cross-country trip of about two hours' duration, which was stated to be the last flight

before he departed for Madagascar with five Blériot machines. He proposes to start an aerial mail service in that French colony and also to establish an aviation school.

Spanish Army Aeroplanes.

THE ex-champion cyclist Osmond, who has made several remarkable flights at Chalons, has now been appointed chief instructor at the school of aviation which is being started in connection with the Spanish Army. He has taken nine Farman machines with him to Spain, and was testing the last two at Buc on the 24th ult., although the flying ground was enveloped in fog.

Encouraging Flying in Finland!

IN connection with the flying meeting which was billed to commence at Helsingfors on Wednesday of last week very stringent regulations were issued by the Governor. Ascents were forbidden except in the presence of officials of the Imperial Russian Aero Club, and no flights were allowed over Sveaborg. It was also stipulated that money received for admission to the ground was to be returned to the spectators if the advertised number of flights did not take place and also if the heights set forth in the programme were not attained. No flights were permitted over spectators or over buildings except at a minimum height of 500 metres. Finally, just to see that these encouraging regulations were carried out to the letter the box office was in charge of the police.

Flying in Australia.

ACCORDING to a cable message from Western Australia, Mr. Joseph Hammond, on the 26th ult., opened the tour of the British and Colonial Aeroplane Co.'s representatives in Australia with a flight on the Bristol biplane of 40 minutes. During this time he passed over Perth Harbour at a height of 2,000 ft., the trip being witnessed by the Governor of Western Australia.

THE WIRING OF AEROPLANES.

WRITING with reference to the construction of her biplane—the "Mayfly"—Miss Lilian Bland says: "It is not at all satisfactory to know that your wires may go at any moment, and I wrote to several firms on this point, but without getting a satisfactory reply, until I mentioned it to Mr. Compton Paterson, the successful Liverpool aviator. He at once said that he had had the same difficulty, and that to prevent the wire getting into the propeller, a narrow-gauge wire, on which there was no strain, was used with the stronger gauge, to which it was tied at various places. As the wires always snapped at the bend, it was evidently the bend which weakened the wire; since then Mr. Paterson has devised a method of making the loops which reduces the chances of breaking to a minimum. The little tool shown in the accompanying sketch is made and held in the vice, the end of the wire being bent round until the loop is formed, the process of doing this being clearly shown in the Sketches I, II, and III. The remaining sketch illustrates the type of wire strainer adopted by Mr. Paterson, and his method of attaching it to the wire. In wiring a machine all the wires should be cut to the right length first. Each section must, of course, be square to itself and to all the other sections. As a rule, one diagonal wire, running from the front spar to the rear spar, is made the shorter to give the main planes a certain angle of incidence. As the tendency of the main planes is to fold up under pressure,

Flyers for the East Indies.

THE brothers Christiaens (Joseph and Armand) with Gustave Siersack are making arrangements to go to Singapore, where they will commence a series of flying exhibitions in various parts of the East Indies. It will be remembered that Christiaens purchased some Bristol biplanes recently which will be taken on this tour.

Rising from the Water.

USING one of his biplanes especially equipped with floats Mr. Glenn Curtiss succeeded in rising from the water at San Diego, California, on the 27th ult. After flying for half a mile he came down again on the water, and turning round, rose again, flew for a distance of about a mile, finally coming to rest at practically the point from which he started.

Observations by Flyers.

By way of an experiment, at San Francisco, last week, Lieut. G. Kelly, when flying with Brookins on a Wright biplane, was able to secure sketches and photographs of the Selfridge Camp. At times the altitude attained was 6,000 feet.

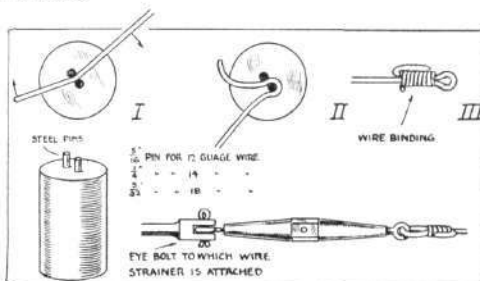
Visiting by Aeroplane.

HAVING been invited by the Burlingame County Club in San Francisco to afternoon tea, Walter Brookins and James Radley flew from the flying grounds at San Francisco to keep their engagement. The distance across country is about 16 miles.

£200 for a 60 Mile Trip.

IN connection with the meeting recently held at Dallas in Texas, Mr. Edward E. Harbord, President of the Illinois Aeroplane Club, offered a prize of £200 to any of the aviators taking part in the meet who would carry the donor from Chicago to St. Joseph or Michigan City, a distance of 62 miles across the lake. The offer expires on Tuesday next.

this throws an unequal strain on the diagonal wiring, and it is advisable to wire the main spars down to the skids and the upper spars to the engine bed, on the same principle as the usual wiring of a monoplane."



Mr. Compton Paterson's wire-straining method as advocated by Miss Lilian E. Bland.



A monoplane recently constructed by Messrs. Wilson Bros. and Gibson, of Twickenham, to their own design, and sold to Messrs. Allan Knight and Co. for practice on the London Aviation Ground, Ealing. The span is 46 ft.

A POWER-DRIVEN BLÉRIOT MODEL.

By E. TEMPLE ROBINS.

SOME few weeks ago, having several ideas I wished to try practically, but being without the means of trying them on a full-sized machine, I conceived the idea of building a model which should be large enough to give results that would compare favourably with those of a full-sized aeroplane.

Still a difficulty remained. The model incorporating these new ideas might possibly fly and yet be extremely inefficient compared with those already on the market. The machine I wanted was a monoplane, so I at last decided to build a model Blériot. This done I had only to dismantle this machine, decide the ideas to be tested, and compare the two sets of results to decide which of the two was the better.

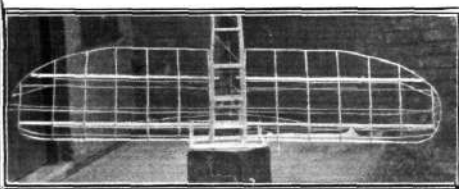
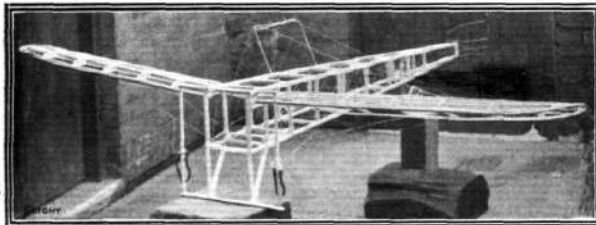
The scale was fixed at 3 ins. to 1 ft., and the only difference between the model and the full-sized machine is that the wings taper off more at the ends, this being done to reduce the

nails. For leading and trailing edges of the planes I used a continuous length of half-round cane, steam bent to the curve and secured to the ribs with small screws. The particular cane used was of an extremely fibrous nature, solid and without nodes.

Small screw-eyes, fixed into the main spars, are used for holding the wing, and warping wires, the knots being soldered to make them secure.

The method of securing the planes to fuselage is seen in section through A. A. The angle of dihedral is 5°. The small bolts holding spars being made of bird-cage wire. The rear spars are merely slipped loosely into holes (C in drawing), thus allowing easy movement during warping.

The wood in which holes, C, are cut has also screw-eyes fixed in it to which the control wires are taken, steering gear and cloche being discarded as too heavy a refinement for an experimental model.



Views of the framework of the model.

turning moment of side gusts of wind. The dihedral angle is perhaps also slightly more pronounced.

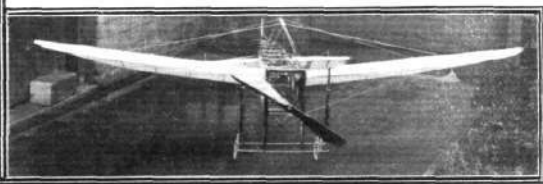
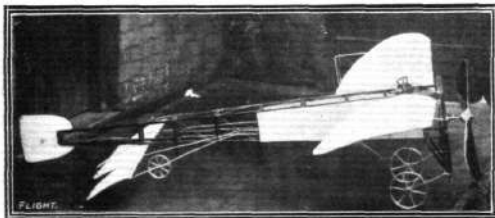
The fuselage is composed entirely of ash, the wood being obtained already cut $\frac{1}{2}$ in. square. This was well planed down and the edges chamfered off. The nails (round and large-headed) served the double purpose of joining the wood-work and providing a means of fixing the stay wires as shown in Fig. 1. The whole of the framework was first nailed, leaving the nails still projecting about $\frac{1}{4}$ in. After the piano wire (26 s.w.g.) was fixed and well tightened the nails were driven home.

The chassis caused me some thought until I discovered a rather novel material for use in models. This is what iron-mongers term bird-cage wire. It is apparently a very mild steel tinned over, and I found that size 10 s.w.g. provided an ideal material for taking an $\frac{1}{2}$ in. Whitworth thread. The

Tail and elevators are made similarly to the main planes with the exception that the front spar is replaced by an aluminium tube, into which a smaller tube, upon which are the elevators, is telescoped. The rear spar is also brought forward to the centre of the plane. The centre and side ribs, of the fixed portion of the tail, are fairly substantial, as through these are passed the bolts holding it to the fuselage. If these bolts are made with fairly long threads a fair adjustment in the lifting effect of the tail can be made irrespective of elevators. This will save considerable time should the engine be slightly out of its proper position.

The fabric on wings and tail planes was first laid over the frames and then tightly sewn along the back and sides. The underside was afterwards tacked to the ribs with brass tacks, thus forming the under curve and also tightly stretching the fabric.

The rudder plane was made with an edge of umbrella ribbing strengthened with 18 s.w.g. bird-cage wire. Two cross wires



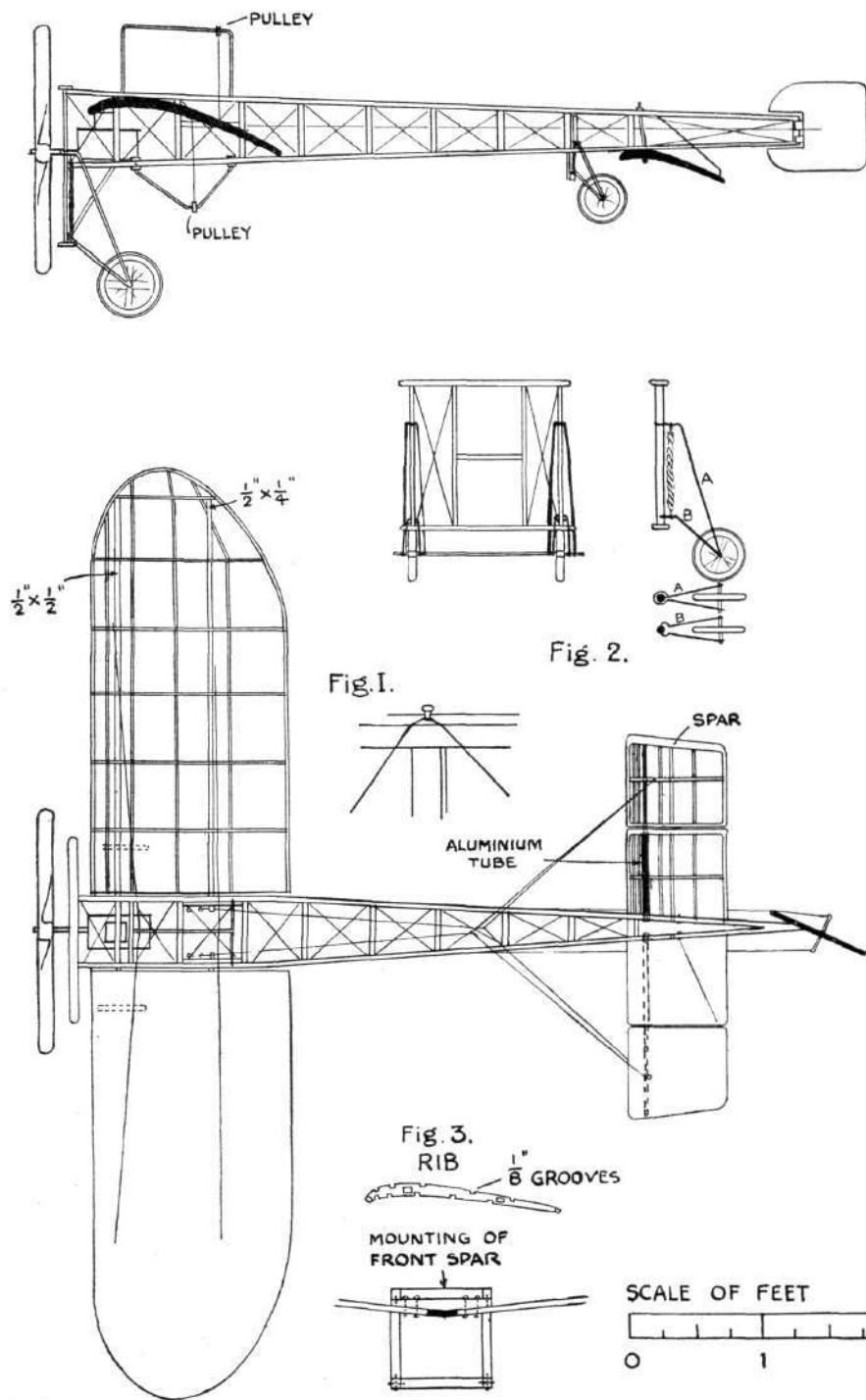
Views of the model complete.

forks and axle for the two front wheels and the method of fixing same can best be understood from Fig. 2. This same wire threaded at the ends served admirably for the upper and lower pylones or cabanes.

The wings are made in the following manner, which made an extremely strong and neat job of them and yet allowed sufficient flexibility for warping. The ribs were cut out solid from $\frac{1}{8}$ in. canary wood, this being best done with a fret-saw. After being smoothed up with sand-paper two holes, one $\frac{1}{2}$ in. square situated 3 ins. from the leading edge and the other $\frac{1}{2}$ in. by $\frac{1}{2}$ in. six inches from the rear edge, were cut out. The edges were next slotted, as in Fig. 3, to receive the $\frac{1}{2}$ in. square wood upon which the fabric rests. The ribs were now spaced out on the two spars and secured with small brass nails. The $\frac{1}{2}$ in. square wood was secured in the slots with $\frac{1}{8}$ in. brass

were passed through the ribbing to fit, when bent, into tin-plate hinges on the fuselage. The accompanying photographs and sketches will no doubt serve to explain any parts I have failed to describe.

In case the reader should imagine that this is an expensive machine to build I give below the cost of the various materials used in it. This is, of course, not taking into consideration the engine, which should be about 1-h.p. My machine is at present fitted with a $\frac{1}{2}$ -h.p. model petrol engine weighing complete 8 lbs. and I have had several long hops with it although the engine is a "home-made" one. My intention is to fit a 1-h.p. engine, of which several are sold weighing considerably less than my $\frac{1}{2}$ -h.p. one does. By thus reducing the weight and also increasing the power, I feel sure it should fly successfully, as during the hops the balance and landing



A power-driven Blériot model.

appeared to be perfect, so far as one was able to observe. The total weight at present is just 14 lbs. It is designed for an approximate speed of 23 miles an hour.

The propeller (the cost of which was nothing, except 9 hours hard work carving it out), is 1 ft. 10 ins. in diameter, by 2 ft. 6 ins. pitch, and should run at about 1,500 revs. per min.

Any reader wishing to build a similar model should be able to do so by the aid of the accompanying scale drawing.

Cost of Materials.		s.	d.
All wood	Obtained from Messrs. Cochrane & Co.	6	6
3 yds. model Pegamoid fabric		5	3
1 1/2-in. wheel and 2 6-in. wheels		3	3
26 s.w.g. piano wire		1	0
Aluminium tube, 9d., bird-cage wire 6d.		1	3
Varnish, nails and screws 9d., ribbing 2d.		0	11
36 1/2-in. square nuts		0	6
Total		18	8

CORRESPONDENCE.

* * The name and address of the writer (not necessarily for publication) MUST in all cases accompany letters intended for insertion, or containing queries.

Correspondents communicating with regard to letters which they have read in FLIGHT, would much facilitate ready reference by quoting the number of each such letter.

NOTE.—Owing to the great mass of valuable and interesting correspondence which we receive, immediate publication is impossible, but each letter will appear practically in sequence and at the earliest possible moment.

Farman Biplane.

[1049] Though I have read almost every number of your excellent paper I have never been quite clear on the following points, and I should esteem it a great favour if you would answer them:—

1. In the H. Farman biplane what methods are used for maintaining stability, and how are they controlled?
2. To rise off the ground how does he use his front and rear elevators?

3. What fixture has he for joining the upright spars to the top and bottom planes?
East Dulwich.

EDWARD J. CREESE.

[1. Balancers; hinged flaps behind the main planes operated by moving the control lever sideways.

2. The leading edge of the front elevator tilts with the trailing edge of the rear elevator.

3. Aluminium flanged sockets.—Ed.]

Wing Action.

[1050] Having been a close reader of all subject matter pertaining to aeronautics for many years, I am naturally attracted to any letters expressing any particular views. It has been my persistent belief for many years in the eventual triumph of the direct lift principle and in this connection I some years ago designed and constructed a hovering propeller of very simple mechanical construction, which I showed to the late Mr. Stanley Spencer, who expressed himself as very much impressed thereby. This propeller or lifter anticipated the one patented by a Polish engineer, M. Zarski, in Paris, by some six or seven years, besides being infinitely simpler in construction.

I have taken every possible opportunity of closely watching the action of the bird's wing and am confirmed in my opinion, in spite of the fact of the wonderful progress made in aeroplane construction, that the eventual safe type of machine will be the active wing principle, in conjunction, perhaps, with the fixed plane, as opposed to the solely fixed plane, or, as I prefer to call it, the dead wing principle.

I believe that many accidents have occurred through the aeroplane suddenly plunging into those so-called pockets or spaces of lesser density than that in which the plane was previously being supported. This being so, is it not clearly demonstrated that the very same tractor or propeller which drew or forced it forward pulls it downward to destruction immediately it enters this changed density?

In comparing the active as against the passive wing principle I argue this wise:

The bird makes its own conditions of flight, by which I mean that not only is it able to rise directly from the ground, but should it suddenly enter a changed density of air it flaps its wings a little faster to gain the necessary support. Neither of these immensely important difficulties is likely to be overcome by the present plane principle. I may grant that the eventual large increase of speed will minimise the danger of travel in stormy weather, but the great danger in alighting is still unprovided for. I believe the action of a bird's wing is one of the simplest, at the same time complex of mechanical movements, and I should be very glad to know what your correspondent, Will A. Weaver (978) considers to be the

nearest approach to the bird wing or ornithopter principle as embodied in his latest machine.

I should also like to understand the mechanical movement embodied in Mr. J. B. Passat's ornithopter (882), illustrated in FLIGHT of November 12th, 1910, as possibly an exchange of ideas may help to further advance my pet theory of the ornithopter principle.

Manchester.

T. L. MENDEL.

Steering.

[1051] Would you be good enough to give me a brief explanation of the various factors affecting the steering of an aeroplane, as I have been confused by the different principles that seem to be involved as regards the use of the rudder and warping the planes.

Portland, Oregon, U.S.A.

GEORGE L. BATCHELDER.

[The actions accompanying the manoeuvre of turning a corner depend somewhat on circumstances, as, for instance, how quickly it is desired to effect the turning. When the machine flies over a circular course the higher velocity of the outer wing naturally causes that side of the machine to heel up relatively to the inner side. This amount of heeling may or may not be sufficient to prevent the machine sliding bodily sideways due to centrifugal force. If it is insufficient the wings will be warped to still further increase the banking and if the machine then heels over too much the warping is reversed so as to reduce the effect.—Ed.]

Level Indicator.

[1052] About two years ago there was a prize offered in France for an instrument to indicate the angle of elevation and depression of an aeroplane in flight, but there was no suitable instrument offered and the money was devoted to some other object. It was suggested at a meeting at Folkestone that a prize should be offered for such an instrument. I have invented a device (without pendulum or similar attachment) which accurately shows the angle of inclination of a plane in motion, but I am unable to bring it out for want of capital, and I thought perhaps one of your readers might like to join me. Only a small sum would be necessary.

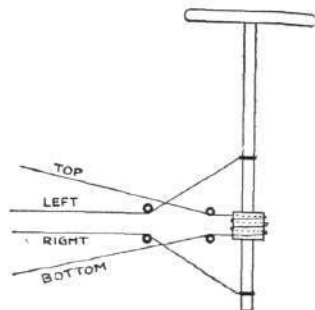
SAX.

Gyroscopic Control.

[1053] I noticed letter No. 975, December 24th, on "Gyroscopic Effect," by Mr. C. Wheatley. This is a subject I have thought a good deal about since the letter which appeared in FLIGHT, I think just after the death of Le Blon, drawing attention to this possible cause of the rather frequent accidents to rotary engine monoplanes. Soon after reading that letter the idea occurred to me to use the gyroscopic effect of the engine and propeller for controlling the machine. The method I propose to use differs considerably from Mr. Wheatley's proposition. Anyone having a barrel shaped fan motor on hand would be able to test the practicability of the idea very easily. The idea is to mount the engine (rotating type) and propeller, and possibly the auxiliaries for same on gimbal bearings in the same manner as a gyroscope and control the monoplane by swivelling the propeller so that it will lead in any desired direction.

The engine and propeller and their auxiliaries could be mounted on the horizontal member of a cross placed in the vertical plane. This cross would be pivoted top and bottom in a square frame corner way up. Trunnions would project at each side from the other two corners of the square frame. The whole arrangement would be carried on these trunnions so

that it could tilt longitudinally, while the engine, &c., would be free to swivel transversely in the square frame. The arrangement would be controlled by a universally mounted steering wheel connected as shown in the sketch. Supposing the propeller to be rotating clockwise when looked at from behind, turning the steering wheel to the right would pull the top corner of the square frame backwards, but this movement would be resisted by the gyroscopic effect and the engine would actually turn to the right, thus pulling the wire marked



left and causing the steering wheel to rock forwards. This forward movement would not be resisted, of course. Pushing the steering wheel forward would pull a lever projecting to the right from the engine mounting by means of connection marked right, thus causing the engine and square frame to tip forwards and actually turning the steering wheel to the left. This turning movement would not be resisted. Pulling the steering wheel backwards would tip the propeller upwards, causing the steering wheel to rotate to the right. An attempt to rotate it to the left would cause it to move backwards and the propeller would turn to the left. It is easy to find what will happen to a gyroscope if an attempt is made to deflect it from the plane in which it is rotating if one remembers that any attempt to deflect it from its plane of motion will result in the deflection taking place 90° further advanced in the direction of rotation. The proposed arrangement should give a very sensitive steering control and at the same time one which would not require the aviator's hand continually on the steering wheel owing to the tendency of the gyroscopic action to keep the moving parts in the same plane, or to stay put, as an American would say. After a little practice the movements would come quite natural and the novelty would soon wear off. Of course any combination of the four simple movements described could be made. Suppose it was desired to ascend and turn to the right, the aviator would pull at the wheel and attempt to turn it to the right then allow it to make the resultant movements. This would deflect the propeller in the desired direction and the amount of deflection would depend on the amount of force applied.

The necessary connections to the carburettor, engine, &c., could be made by Bowden wire.

Bradford.

HAROLD SMITH.

Aeroplane Control.

[1054] It may interest Mr. E. Temple Robins, who writes (No. 1016) on the above subject, to know that a patent has been applied for for a system of automatic control to counteract the tendency of an aeroplane to tilt sideways or to dive or soar suddenly owing to gusts of wind. This apparatus will be worked from a small dynamo coupled to the main-shaft of the engine and will operate horizontal fans in each wing tip and in the tail, in addition to warping the wing tips, so that an active force will be applied to right the aeroplane in addition to the wind pressure acting on the warped wing tips.

The aviator will have no need to touch any levers or to exert himself in any way. The same apparatus allows the aviator to cant the aeroplane at will and to depress or elevate the tail for rising or descending. He can also, if he wishes, set all three fans going "ahead" simultaneously to aid him in rising off the ground or in checking his descent.

If any firm of aeroplane builders is interested in such an apparatus I should be pleased to furnish them with further particulars.

Newcastle.

R. E.

MODELS.

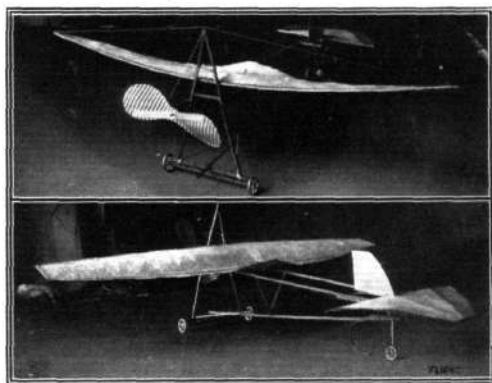
Gliding Models.

[1055] I have read with interest letter No. 983 (*re* Gliding Models).

I have just completed a model of my own design, photos of which I enclose. This model will glide after the propeller has stopped. Its chief feature is a double axle bar with two small inverted steel springs, which saves the chassis from damage when falling. There is also a spring cane skid directly in front of the rear wheel, which protects the tail portion in a similar way to chassis springs.

This model is very easy to make and quite strong, with few fittings.

Main plane, 3 ft. span; chord "in centre" 6 ins., tapering to 3 ins. at each end; planes are covered with stiff paper; camber in got by cutting paper slightly larger and placing



in position when gluing; tail plane is 12 ins., tapering to 3 ins. at rear. Total length, 33 ins. Motor power, 20 strands of $\frac{1}{16}$ in. elastic, and Cochrane propeller (or tractor), $8\frac{1}{2}$ ins.; the body of model is made of $\frac{1}{4}$ -in. hardwood and aluminium rib wire.

This is a good flyer and glider, either with or without dihedral angle, better if anything without.

I am making, too, a monoplane without a tail (as No. 983 writes), but it will have a small elevator instead. I am very much interested in "Orestes" machine with three propellers, and will look forward with pleasure in seeing sketch later on.

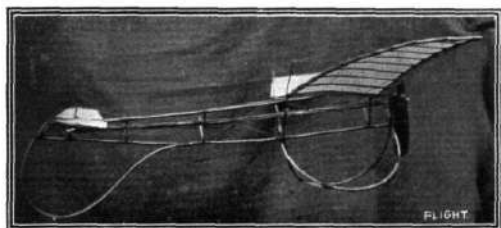
Portrush.

ROBERT LEE.

Model Monoplane.

[1056] Enclosed, you will find a photo of a monoplane model I have made. It is entirely of my own make and design. The smaller plane is in front. I do not think there is anything exceptional in the design but perhaps some particulars might be interesting to some of your readers:—

Greatest span, 50 ins.; length over all, 36 ins.; length of one large wing, 22 ins.; greatest chord of large wing, $9\frac{1}{4}$ ins.;



span over front plane, 22 ins.; length of one front wing, $9\frac{1}{4}$ ins.; greatest chord of front wing, 4 ins.; 12 in. propeller of 25 in. pitch; total supporting surface, 284 sq. ins.; total weight with 22 strands of $\frac{1}{16}$ -in. strip elastic, $10\frac{1}{2}$ ozs.

The wings are attached to the fuselage by hooks and the dihedral angle is regulated by the threads running to the

upper and lower surfaces of the plane. By these threads the wings can very easily be warped. Ailerons are attached to the main plane. The front plane is the elevator and is attached to the fuselage by rubber straps which act very well as shock absorbers should the plane come in contact with the ground. I have put on substantial skids of cane, which help to protect both the wings and propeller when the machine comes down. In binding or bracing I have found ordinary carpet thread sized with seccotine to be very strong and durable. My results have not been very satisfactory, my longest flights not exceeding 140 ft. Perhaps someone could suggest an improvement that would result in better performances being accomplished with the machine. I should be pleased to give any further particulars should they be required by any of your readers.

Higgate,

MALCOLM B. ROSS.

Model Planes.

[1057] May I suggest, in furtherance of the suggestion contained in letter No. 932, the use of the unpolished wood veneer used by cabinet-makers for making the planes of model aeroplanes. Covered with fine calico I have found it answer excellently, being cheap, strong and light.

Leicester.

V. R.

PUBLICATIONS RECEIVED.

The Mea Arc Light Magneto. 1910 Successes and Testimonials. London: United Motor Industries, Ltd., 45-46, Poland Street, W. *The Encyclopedia of Sport.* Vol. II. *Crocodile Shooting—Hound Breeding.* London: William Heinemann. Price 10s. 6d. net. *Aeronautical Classics No. 5. Gliding.* By Percy S. Pilcher. London: King, Sell, and Olding, 27, Chancery Lane. Price 1s. net.

Catalogue.

Wood and Iron and Composite Buildings. W. Harbrow, South Bermondsey Station, London, S.E.

SPECIAL NOTICE.—The Proprietors of FLIGHT beg to announce that owing to the strike in the Printing Trade, all matter, Editorial and Advertisement, must for the present reach the office by Monday morning, mid-day, to be in time for the next issue—44, St. Martin's Lane, W.C.

Index and Title Page for Vol. II.

THE Index and Title Page for Vol. II, January to December, 1910, of FLIGHT, has now been published. Any reader may obtain one by sending 2d. to the Publishers, 44, St. Martin's Lane, London, W.C. After February 28th, a charge of 6d., post free, will be made.

"FLIGHT" ART PAPER EDITION.

IN response to numerous requests, the publishers of FLIGHT have arranged to print a limited number of copies each week upon art paper, thereby enabling the high quality of the illustrations and matter to be fully appreciated. These can only be supplied by subscription, the annual charge, post free, being: United Kingdom, 15s.; Abroad, 20s. Present subscribers can secure these copies by paying the difference *pro rata* of their unexpired subscriptions. Application should be made to the PUBLISHER, 44, ST. MARTIN'S LANE, W.C.

DIARY OF COMING EVENTS.

British General Events.

Mar. 24-April 1 Olympiad Aero Show.
July .. *Daily Mail* Round England Contest.
July .. Gordon-Bennett Aviation Cup Contest.
Oct. 31 .. Close of British Michelin Cup.

British Clubs and Associations.

Feb. 7 .. "The Work of the School Aero Club." By R. P. Grimmer at Caxton House (A.A. and M.U.).
Feb. 9 .. "From Kites to Aeroplanes." Lecture by Mr. S. F. Cody at Imperial Institute (Aerial League and Kite and Model Aeroplane Association).
Feb. 14 .. "Pressure on Planes and Curves." By Mr. F. Handley Page at Royal Society of Arts.
Feb. 14 .. "Plan Shape of Flying Machines. Its Relation to Control and Longitudinal Stability." By A. P. Thurston, B.Sc., at Caxton House (A.A. and M.U.).
Mar. 8 .. "Some Lessons of 1910." By Major J. N. C. Kennedy at Caxton House (A.A. and M.U.).
Mar. 21 .. "The Manufacture, Properties and Use of Elastic Motors." By F. B. Beringer at Caxton House (A.A. and M.U.).
March .. Annual General Meeting, Aeronautical Society.
April 11 .. "The British Pioneers of Aviation." By A. C. Horth at Caxton House (A.A. and M.U.).

RECORDS.

Duration.—Henry Farman (France), at Etampes, on a Henry Farman biplane fitted with a Gnome motor: 8 hrs. 12 mins., covering 463 kiloms. (288½ miles).

Distance.—Maurice Tabuteau (France), at Buc, on a Maurice Farman biplane, 584'935 kiloms. (365 miles) in 7h. 48m. 31½s.

Altitude.—A. Hoxsey (U.S.A.), at Los Angeles, on a Wright biplane, 3,497 metres (11,474 ft.).

Speed.—A. Leblanc (France), on a Blériot monoplane, fitted with Gnome motor, 5 kiloms. in 2 mins. 45½ secs. = 108 k.p.h. (67½ m.p.h.).

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